

The Journal of Abnormal and Social Psychology

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CONTENTS OF VOLUME 37

ARTICLES AND NOTES

ALDWIN, A. L. Personal Structure Analysis: A Statistical Method for Investigating the Single Personality...	163-
AVELAS, A., AND LEWIN, K. Training in Democratic Leadership.	115-
BECK, S. J. Error, Symbol, and Method in the Rorschach Test.	83-
CELLAK, L. The Nature of Slogans	496-
CRUNER, K. F. Of Psychological Writing: Being Some Valedictory Remarks on Style	52-
DEEGAN, R. F. A Symbolic Action during Bereavement.....	403-
ERSTEIN, R. Ideologies in Psychological Warfare.	369-
ELLSON, D. G. Book Publications in Psychical Research and Spiritualism in Wartime.....	388-
ESTINGER, L. Wish, Expectation, and Group Standards as Factors Influencing Level of Aspiration	184-
FRANK, J. D. The Value of Psychology as a Premedical Study.	256-
REEMAN, G. L., MANSON, G. E., KATZOFF, E. T., AND PATHMAN, J. H. The Stress Interview	427-
FRINGS, W. W. The Verbal Summator Technique and Abnormal Mental States	529-
HARRIMAN, P. L. The Experimental Production of Some Phenomena Related to the Multiple Personality... ..	244-
HARRIS, D. B. A Play Activities Blank as a Measure of Delinquency in Boys.....	546-
IRSCHBERG, G., AND GILLILAND, A. R. Parent-Child Relationships in Attitude	125-
HUNT, W. A., WITTON, C. L., AND HARRIS, H. I. Temporary Mental Impairment Following a Petit Mal Attack.....	104-
KANT, O. The Technique of Dream Analysis.	398-
KANT, O. "Inappropriate Laughter" and "Silliness" in Schizophrenia... ..	120-
KISKER, G. W. A Projective Approach to Personality Patterns during Insulin-Shock and Metrazol-Convulsive Therapy	406-
LESHAN, L. The Breaking of a Habit by Suggestion during Sleep...	264-
LO, C. F. Moral Judgments of Chinese Students.....	511-
MAGARET, A. Parallels in the Behavior of Schizophrenics, Paretics, and Pre-senile Non-Psychotics	448-
MARINHO, H. Social Influence in the Formation of Enduring Preferences	131-
MENROSE, L. S., AND WILSON, D. J. The Spatial Dispersion of Psychotic Responses in the Tapping Test.....	329-
MITCHARD, R., AND ROSENZWEIG, S. The Effects of War Stress upon Childhood and Youth	270-
RABIN, A. I. Differentiating Psychometric Patterns in Schizophrenia and Manic-depressive Psychosis	71-
RETHILINGSHAFFER, D. Relationship of Tests of Persistence to Other Measures of Continuance of Activities	560-
RODNICK, E. H. The Effect of Metrazol Shock upon Habit Systems.....	40-
ROSENZWEIG, S. Fantasy in Personality and Its Study by Test Procedures.....	469-
RUGO, D., AND CANTRIL, H. The Wording of Questions in Public Opinion Polls.....	201-
SHIRLEY, M. M. Children's Adjustments to a Strange Situation.....	260-
SHULTZ, I. T. The Emotions of the Tubercular: A Review and an Analysis	

	PAGE.
SLOTKIN, J. S. The Nature and Effects of Social Interaction in Schizophrenia	345-368
SPOERL, H. D. Abnormal and Social Psychology in the Life and Work of William James	3-19
TRESSELT, M. E., AND VOLKMANN, J. The Production of Uniform Opinion by Non-social Stimulation	234-243
VERNON, W. H. D. Hitler, the Man—Notes for a Case History	295-308
WALLEN, R. Ego-Involvement as a Determinant of Selective Forgetting	20-39
WHITE, R. W., AND SHEVACH, B. J. Hypnosis and the Concept of Dissociation.	309-328
WOLFE, D. Factor Analysis in the Study of Personality.. . . .	393-397
WRIGHT, B. A. Altruism in Children and the Perceived Conduct of Others	218-233

BOOK REVIEWS

(The Reviewer's name appears in parentheses after the title of the work.)

ALDRICH, C. A., AND ALDRICH, M. M. Feeding Our Old Fashioned Children (M. Shirley)	158
BABCOCK, H. Time and the Mind: Personal Tempo—the Key to Normal and Pathological Mental Conditions (G. K. Yarcorzynski)	284-285
BARKER, L. F. Psychotherapy (S. Rosenzweig)	156-157
BLOS, P. The Adolescent Personality (M. C. Jones)	144-146
BOCHNER, R., AND HALPERN, F. The Clinical Application of the Rorschach Test (M. C. Myers)	410-420
BRADLEY, C. Schizophrenia in Childhood (G. Gardner)	291
BRITT, S. H. Social Psychology of Modern Life (A. Thomsen)	146-148
CAMERON, D. E. Objective and Experimental Psychiatry (2nd ed.) (C. Landis)	141-142
CANTREL, H. The Psychology of Social Movements (D. W. Chapman)	273-276
CARLSON, E. R. Born That Way (E. A. Doll)	155-156
CASE, V. Your Personality—Introvert or Extravert? (S. G. Dulsky)	289-290
CATTELL, R. B. General Psychology (A. L. Baldwin)	157-158
CLECKLEY, H. The Mask of Sanity, an Attempt to Reinterpret the So-called Psychopathic Personality (W. Healy)	139-141
CRILE, G. Intelligence, Power and Personality (R. Stagner)	414-415
GARRETT, H. E. Great Experiments in Psychology (Rev. ed.) (W. A. Hunt)	159
GILLESPIE, R. D. Psychological Effect of War on Citizen and Soldier (A. Thomsen)	575
HATHAWAY, S. R. Physiological Psychology (K. U. Smith)	415-416
HAYAKAWA, S. I. Language in Action (S. G. Estes)	290
HEPNER, H. W. Psychology Applied to Life and Work (P. S. de Q. Cabot)	417-419
HOLZINGER, K. J., AND HARMAN, H. H. Factor Analysis: A Synthesis of Factorial Methods (J. P. Guilford)	567-568
HORST, P., WITH THE COLLABORATION OF WALLIN, P., AND GUTTMAN, L., AND ASSISTED BY WALLIN, F. B., CLAUSEN, J. A., RIED, R., AND ROSFINTHAL, I. The Prediction of Personal Adjustment: A Survey of Logical Problems and Research Technique, with Illustrative Application to Problems of Vocational Selection, School Success, Marriage, and Crime (D. Horn)	280-281
KARDNER, A. The Traumatic Neuroses of War (A. Thomsen)	571-572
KLOPFER, B., AND KELLEY, D. M. The Rorschach Technique (C. Myers)	572-573
KORZYBSKI, A. Science and Sanity. An Introduction to Non-Aristotelian Systems and General Semantics	410-411
LEE, I. J. Language Habits in Human Affairs (J. Pilley)	569-571
LLOYD-JONES, E., AND FEDDER, R. Coming of Age (S. G. Dulsky)	288-289
LUNDBERG, G. A. Social Research: A Study in Methods of Gathering Data (2nd ed.) (P. R. Farnsworth)	569

CONTENTS OF VOLUME 37

PAGE

MASLOW, A. H., AND MITTELMANN, B. Principles of Abnormal Psychology: The Dynamics of Psychic Illness (D. Shakow)	148-149
MCKINNEY, F. Psychology of Personal Adjustment. Students' Introduction to Mental Hygiene (H. D. Spoerl)	278-280
MILLER, N. E., AND DOLLARD, J. Social Learning and Imitation (T. Newcomb)	276-278
MIRA Y LÓPEZ, E. Psicología Evolutiva del Niño y el Adolescente (H. D. Spoerl)	571
MORGAN, J. J. B. Psychology (W. A. Hunt)	159
MOUCHLT, E. Percepción, Instinto y Razón (B. Samelson)	421-422
PAVLOV, I. P. Conditioned Reflexes and Psychiatry (M. Haire)	137-139
PENFIELD, W., AND ERICKSON, T. C. Epilepsy and Cerebral Localization (B. Crothers)	290-291
PORTERFIELD, A. L. Creative Factors in Scientific Research (E. Heidbreder)	574-575
PORTUS, S. D. The Practice of Clinical Psychology (C. Rogers)	286-287
REIK, T. Masochism in Modern Man (S. Rosenzweig)	153-154
ROETHLISBERGER, F. J. Management and Morale (D. McGregor)	281-284
ROWNTREE, B. S. Poverty and Progress (F. H. Kirkpatrick)	420-421
SANDS, I. J. Nervous and Mental Diseases for Nurses (4th ed.) (G. Gardner)	291
SELLIN, T. The Criminality of Youth (E. Powers)	154-155
SHERMAN, M. Basic Problems of Behavior (R. Strang)	142-144
TIFFIN, J., KNIGHT, F. B., AND JOSEY, C. C. The Psychology of Normal People (A. L. Baldwin)	157-158
TOWLE, C. Social Case Records from Psychiatric Clinics (C. R. Rogers)	149-150
TRAVIS, L. E., AND BARUGH, D. W. Personal Problems of Everyday Life (R. Strang)	142-144
VALENTINE, W. L. Experimental Foundations of General Psychology (Rev. ed.) (W. A. Hunt)	159
VAUGHAN, W. F. General Psychology (Rev. ed.) (A. L. Baldwin)	157-158
WARNER, W. L., JUNKER, B. H., AND ADAMS, W. A. Color and Human Nature: Negro Personality Development in a Northern City (T. M. Newcomb)	152-153
WARNER, W. L., AND LUNT, P. S. The Social Life of a Modern Community. Yankee City Series. Volume One (J. Arsenian)	412-413
WERTHAM, F. Dark Legend. A Study in Murder (H. D. Spoerl)	287
WHITING, J. W. W. Becoming a Kwoma: Teaching and Learning in a New Guinea Tribe (R. Benedict)	409-410
WOODWORTH, R. S. Heredity and Environment: A Critical Survey of Recently Published Material on Twins and Foster Children (B. S. Burks)	134-137
ZILBOORG, G., IN COLLABORATION WITH HENRY, G. W. A History of Medical Psychology (E. Heidbreder)	416-417
ZIFF, G. K. National Unity and Disunity: The Nation as a Bio-social Organism (F. H. Sanford)	151

AUTHORS

(The names of authors of original articles are printed in CAPITALS; of authors of books reviewed, in Roman; and of reviewers, in *Italics*.)

	PAGE		PAGE
Adams, W. A.	152	HARRIS, D. B.	546
Aldrich, C. A.	158	HARRIS, H. I.	566
Aldrich, M. M.	158	Hathaway, S. R.	415
<i>Arsenian, J.</i>	412	Hayakawa, S. I.	290
Babcock, H.	284	<i>Healy, W.</i>	139
<i>Baldwin, A. L.</i>	157	<i>Heidbreder, E.</i>	416, 574
BALDWIN, A. L.	163	Henry, G. W.	416
Barker, L. F.	156	Hepner, H. W.	417
Baruch, D. W.	142	<i>Hilgard, E. R.</i>	410
BAVELAS, A.	115	HIRSCHBERG, G.	125
BECK, S. J.	83	Holzinger, K. J.	567
BELLAK, L.	496	<i>Horn, D.</i>	280
<i>Benedict, R.</i>	409	Horst, P.	280
Blos, P.	144	<i>Hunt, W. A.</i>	159
Bochner, R.	419	HUNT, W. A.	566
Bradley, C.	291	<i>Jones, M. C.</i>	144
Britt, S. H.	146	Jovey, C. C.	157
BRUNER, K. F.	52	Junker, B. H.	152
<i>Burks, B. S.</i>	134	KANT, O.	104, 398
<i>Cabot, P. S. de Q.</i>	417	Kardiner, A.	571
Cameron, D. E.	141	KATZOFF, E. T.	427
Cantril, H.	273	Kelley, D. M.	571
CANTRIL, H.	469	<i>Kirkpatrick, F. H.</i>	420
Carlson, E. R.	155	KISKER, G. W.	120
Case, V.	289	Klopper, B.	572
Cattell, R. B.	157	Knight, F. B.	157
<i>Chapman, D. W.</i>	273	Korzybski, A.	410
Clausen, J. A.	280	<i>Landis, C.</i>	141
Cleckley, H.	139	Lee, I. J.	599
CREEGAN, R. F.	403	LESHAN, L.	406
Crile, G.	414	LEWIN, K.	115
<i>Crothers, B.</i>	290	Lloyd-Jones, R.	288
<i>Doll, E. A.</i>	155	Lo, C. F.	264
Dollard, J.	276	Lundberg, G. A.	569
<i>Dulsky, S. G.</i>	288, 290	Lunt, P. S.	412
ERSTEIN, R.	369	MAGARET, A.	511
ELLSON, D. G.	388	MANSON, G. E.	427
Erickson, T. C.	290	MARINHO, H.	448
<i>Estes, S. G.</i>	290	Maslow, A. H.	148
<i>Farnsworth, P. R.</i>	569	<i>McGregor, D.</i>	281
Fedder, R.	288	McKinney, F.	278
FESTINGER, L.	184	Miller, N. E.	276
FRANK, J. D.	256	Mira y López, E.	571
FREEMAN, G. L.	427	Mittelman, B.	148
<i>Gardner, G.</i>	291	Morgan, J. J. B.	159
Garrett, H. E.	159	Mouchet, E.	421
Gillespie, R. D.	575	<i>Myers, C.</i>	572
GILLILAND, A. R.	125	<i>Myers, M. C.</i>	419
GRINGS, W. W.	529	<i>Newcomb, T.</i>	276
<i>Gulford, J. P.</i>	567	<i>Newcomb, T. M.</i>	152
Guttman, L.	280	PATHEMAN, J. H.	427
<i>Haire, M.</i>	137	Pavlov, I. P.	137
Halpern, F.	419	Penfield, W.	290
Harman, H. H.	567	PENROSE, L. S.	131
HARRIMAN, P. L.	244	<i>Pilley, J.</i>	569

CONTENTS OF VOLUME 37

	PAGE		PAGE
Porterfield, A. L.	574	SPOLRL, H. D.	
Porteus, S. D.	286	<i>Spoerl, H. D.</i>	278, 287, 57
<i>Powers, E.</i>	154	<i>Stagner, R.</i>	41
PRITCHARD, R.	329	<i>Strang, R.</i>	14
RABIN, A. I.	270	<i>Thomson, A.</i>	146, 571, 57
Reed, R.	280	Tiffin, J.	15
Reik, T.	153	Towle, C.	14
RETHLINGSHAFER, D.	71	Travis, L. E.	14
RODNICK, E. H.	560	TRESSSELT, M. E.	23
Roethlisberger, F. J.	281	Valentine, W. L.	15
<i>Rogers, C.</i>	286	Vaughan, W. F.	15
<i>Rogers, C. R.</i>	149	VERNON, W. H. D.	25
Rosenthal, E.	280	VOLKMAN, J.	23
ROSENZWEIG, S.	40, 329	WALLEN, R.	2
<i>Rosenzweig, S.</i>	153, 156	Wallin, F. B.	28
Rowntree, B. S.	420	Wallin, P.	28
RUGG, D.	469	Warner, W. L.	152, 41
<i>Samelson, B.</i>	421	Wertham, F.	28
Sands, I. J.	291	WHITE, R. W.	30
<i>Sanford, F. H.</i>	151	Whiting, J. W. W.	40
Sellin, T.	154	WILSON, D. J.	13
<i>Shakow, D.</i>	148	WITTSON, C. L.	56
Sherman, M.	142	WOLFLE, D.	39
SHEVACH, B. J.	309	Woodworth, R. S.	13
<i>Shirley, M.</i>	158	WRIGHT, B. A.	21
SHIRLEY, M. M.	201	<i>Yarcorzynski, G. K.</i>	28
SHULTZ, I. T.	260	Zilboorg, G.	41
SLOTKIN, J. S.	345	Zipf, G. K.	15
<i>Smith, K. U.</i>	415		

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ABNORMAL AND SOCIAL PSYCHOLOGY IN THE LIFE AND WORK OF WILLIAM JAMES *

BY HOWARD DAVIS SPOERL
American International College

IN 1906, four years before his death, William James wrote to Clifford W. Beers, in reference to the latter's history: "The most striking thing in it to my mind is the sudden conversion of you from a delusional subject to a maniacal one—how the whole delusional system disintegrated the moment one pin was drawn out by your proving your brother to be genuine. I never heard of so rapid a change in a mental system."¹ This comment is neatly representative of James's gift for incisively summarizing a psychological situation. It also shows that he kept alive an interest in pathological phenomena as belonging to his many-sided realm of being, the pluralistic universe. Nor was this interest solely theoretical. James, who on one occasion had defended the position of non-professional therapists,² stated on another that some of Janet's discoveries outdid laboratory measurements in importance.³ From the age of twenty-five, when he was first attracted to this field and to medicine,⁴ to the year when Janet lectured at Harvard—that of the first letter to Beers—and on to active support of the mental-hygiene movement, James preserved a deep interest in what he liked to call "exceptional mental states."⁵

His *formal* and academic participation in abnormal psychology was more significant than its extensiveness might suggest. Through *The Principles of Psychology* "his medical approach and emphasis on 'exceptional mental states' gave him a place in the development" of the field.⁶ Besides frequently citing abnormal psychological phenomena for illustrative purposes, this book contains treatments

* Dr. Spoerl's article is written in honor of the one-hundredth anniversary of the birth of William James (January 11, 1842). Although many evaluations have been made of James's contributions to general psychology and to philosophy there seems to have been no previous examination of his work in the special fields of social and abnormal psychology.—EDITOR.

¹ Beers, C. W. *A mind that found itself*. (Rev. ed.) New York: Longmans, Green, 1921, p. 243.

² Perry, R. B. *The thought and character of William James*. Boston: Little, Brown, 1935, Vol. II, p. 303.

³ *Ibid.*, II, p. 121.

⁴ *Ibid.*, II, p. 5.

⁵ *Ibid.*, II, p. 674.

⁶ *Ibid.*, II, p. 91.

of the following relevant topics: mental blindness, sensory aphasia, hysteria, disorders of memory and of the will, hallucinations, and hypnotism. *The Varieties of Religious Experience* also has much pertinent material. For three years James conducted at Harvard a seminar course in Mental Pathology, "embracing a review of the principal forms of abnormal or exceptional mental life."⁷ In 1896 he delivered a series of public lectures on Abnormal Mental States. These lectures were never written out, and only notes remain.⁸ Their titles were as follows:

- | | |
|-------------------------|---------------------------|
| 1. Dreams and Hypnotism | 5. Demoniactal Possession |
| 2. Hysteria | 6. Witchcraft |
| 3. Automatisms | 7. Degeneration |
| 4. Multiple Personality | 8. Genius |

It will be noticed that these topics, some of which are treated in the *Principles*, do not correspond closely to the usual rubrics of "abnormal psychology." The last two lectures doubtless involved some social psychology, since their titles denote leading concerns of Lombroso and Nordau, on whose work students at Harvard presented reports.⁹ James is remembered by students for his insistence on a relativistic conception of abnormality. A distinctive feature of his psychology, this insistence was often formulated by James in terms of continuities without clear contours, in which the normal shaded off into the pathological. Hallucinations, for instance, are but special forms of normal perception; genius is an extreme manifestation of normality; and "the border line between objective sense and nonsense is hard to draw; that between subjective sense and nonsense, impossible."¹⁰ A former student recalled especially the lesson that "there is no sharp line to be drawn between 'healthy' and 'unhealthy' minds, that all have something of both."¹¹ In discussing religious experiences James pointed out, moreover, that evidence of mental abnormality on the part of the possessor is no reflection on the possible validity of the experience or opinion.¹² In fact, abnormality is important chiefly

⁷ *Ibid.*, II, p. 126. James, W. *The letters of William James*. Edited by his son, Henry James. Boston: Atlantic Monthly Press, 1920, Vol. II, p. 3.

⁸ Perry, *op. cit.*, II, p. 168.

⁹ *Letters*, II, p. 15. In 1894 James undertook to seek a translator for Nordau's *Entartung*, which had appeared in 1893. An English translation was published in London, 1895.

¹⁰ James, W. *The principles of psychology*. New York: Holt, 1893, Vol. II, p. 115. *Ibid.*, II, p. 360. *Ibid.*, I, p. 264.

¹¹ *Letters*, II, p. 15.

¹² James, W. *The varieties of religious experience*. New York: Longmans, Green, 1902, pp. 17, 18.

because it is instructive. It is the *extreme* examples that yield the "profounder information."¹³ On this point James aligned himself with the tradition of French psychology which seeks to learn about the normal through the abnormal.

When it is recalled that despite its physiological emphasis James's psychology was a thoroughgoing *consciousness*-psychology, the importance of these points of view becomes focal. To James, the "most important step forward" in psychology in his time was the discovery of *dissociation of consciousness*. Although its demonstration had been largely in abnormal subjects, James felt that "the elementary mechanisms of our life are presumably so uniform that what is shown to be true in a marked degree of some persons is probably true in some degree of all."¹⁴

The phenomenon of dissociation, which came to light through the work of Janet, Binet, Ribot, and others, became the special concern of Dr. Morton Prince, the founder of this JOURNAL. Why was it so important to James? It aided, to be sure, in explaining psychopathological situations. It made possible the interpretation of various religious and mystical attitudes to which James gave special study. It offered a serviceable mechanism for the presentation of certain phenomena in the field of psychical research. But its special significance lay in the fields of general psychology and metaphysics, which together constituted the chief intellectual emprise of William James.

1. Central to his psychology was the functioning of conscious experience in its numerous aspects. The "stream of consciousness" was a figure devised in order to portray the continuously shifting border of contact between the individual and the world. But this is no mere single-tracked homogeneity; it ebbs and flows; it is *variegated* although unified. The problem of the stream of consciousness, and hence the basic problem of psychology, was to authenticate *variety-in-unity*. Dissociation threw much light upon this concern.

2. In the broader realm of philosophy James dealt with the matter in another version. Here the aim was to achieve a total synthesis of realities without sacrificing the individuality of any component, since the individual nature of anything was an irreducible phenomenon of experience. Philosophy had often pro-

¹³ *Ibid.*, p. 486.

¹⁴ *Ibid.*, p. 233.

duced an intelligible universe only by discoloring and recasting its individualities through some higher arrangement that destroyed them. When James turned to metaphysics, it was to deal with the original problem of individualities (variety)-in-unity. In short, a pluralistic logic in psychology led ultimately to the formulation of a pluralistic universe.

The fact that James worked with a consciousness-psychology has important bearings on his theory of motivation, which later will be discussed. Dissociation is phenomenological, and its immediate significance, as McDougall has pointed out, is different from the reverberations of other processes or mechanisms, such as the repression of unconscious factors.¹⁵ It is uncertain how much James knew, and exactly what he thought, of Freud's dynamic interpretation of psychological conflict. Traditional philosophical presentations of an Unconscious he belabored roundly:

Hartmann fairly boxes the compass of the universe with the principle of unconscious thought. For him there is no nameable thing that does not exemplify it. But his logic is so lax and his failure to consider the obvious alternatives so complete that it would, on the whole, be a waste of time to look at his arguments in detail. The same is true of Schopenhauer, in whom the mythology reaches its climax.¹⁶

Yet in 1902 he included *Freud* with Binet, Janet, Prince, and others as having "revealed to us whole systems of underground life," the result of which was to "throw a wholly new light upon our natural constitution."¹⁷ After encountering Freud and Jung in person at the International Congress at Clark in 1909 he made this comment:

I strongly suspect Freud, with his dream-theory, of being a regular *halluciné*. But I hope that he and his disciples will push it to its limits, as undoubtedly it covers some facts, and will add to our understanding of "functional" psychology, which is the real psychology.¹⁸

On the same occasion he wrote of Freud: "I can make nothing in my own case with his dream theories, *and obviously 'symbolism' is a most dangerous method.*"¹⁹

He wanted psychology to be an instrument for disclosing human nature to itself in order to further concrete living. Technical explanations and quantifications of mental life could be left to the

¹⁵ McDougall, W. The relations between dissociation and repression. *Brit. J. Med. Psychol.*, 1938, 17.

¹⁶ *Principles*, I, p. 169.

¹⁷ *Varieties*, pp. 234, 235.

¹⁸ Perry, *op. cit.*, II, p. 123.

¹⁹ *Letters*, II, p. 328. Italics are ours.

experimentalists from whom he shrank in a mixture of appreciative and disrespectful amazement. This desire bespeaks a strong therapeutic interest. The *Principles* was hailed by the public with gratitude for personal help received from the book.²⁰ One critic contended that "the interest which expressed itself in the *Principles* was not, strictly speaking, an interest in the mind, but an interest in men. Time only deepened that tendency."²¹ This intended reproach remains as a tribute. Its import was acknowledged by James himself when he asserted that "the kind of psychology which could cure a case of melancholy, or charm a chronic insane delusion away, ought certainly to be preferred to the most seraphic insight into the nature of the soul."²² It is said that after he turned to philosophy James continued to study only those psychological data which concerned psychopathology.²³ During this later period the problem of individualities-in-unity was pursued along the theoretical lines of metaphysics; in a way, however, it continued to reflect concrete concern with "exceptional mental states" and with "varieties" as of religious experience. Not by any means to be ignored is R. B. Perry's query as to "how far James himself experienced exceptional mental states."²⁴

Leading features, then, of James's abnormal psychology were the positive assertion that the exceptional interprets the usual, and the negative insistence that the "abnormal" may be the misunderstood or the unappreciated. If religious experiences, for instance, are definable in terms of neuroticism or insanity, herein lies an *opportunity to understand* them in the light of the largest possible context of relevance, without deprecation or flinching of any kind.²⁵ If such experiences go against our favorite neurological, intellectual, or agnostic prejudices, it is the prejudices rather than the experiences which are the more in need of reinterpretation. James's perpetual cry was: "Take the largest view! Make room for this!" His personal life was a record of continual struggle between his "idealism" in the vulgar sense of the word and the constraining menace of philosophical idealism by which his thinking refused to be shackled. "The accord of moralism and religion is superficial, their discord radical. Only the deepest thinkers on both sides see

²⁰ *Ibid.*, II, p. 300.

²¹ Brett, G. S. *A history of psychology*. New York: Macmillan, 1921, Vol. III, p. 265.

²² Perry, *op. cit.*, II, p. 120.

²³ *Letters*, II, p. 3.

²⁴ *Op. cit.*, II, p. 674.

²⁵ *Varieties*, Ch. I.

that one must go.”²⁶ Naïve solutions that negate freedom and hamper energies cannot be accepted. We cannot wish nonconformities out of the universe. In view of all this, it might be suggested that James did not become an abnormal psychologist in a professional sense because his whole interest in the field tended to abolish its “abnormality”! We shall see that an almost parallel proposition may be advanced for his social psychology.

It is the *Varieties of Religious Experience* that James himself viewed as a contribution to the abnormal field:

I regard the *Varieties* . . . as in a sense a study of morbid psychology, mediating and interpreting to the philistine much that he would otherwise despise and reject utterly.²⁷

While working toward this book, and planning a lecture to physicians on “Demoniacal Possession,” James also made clear the close connection he saw (which Perry shows was standard in James’s day)²⁸ between mental abnormality and so-called psychical phenomena:

I shall plead for . . . the recognition of demon possession as a regular “morbid-entity” whose commonest homologue today is the “spirit-control” observed in test-mediumship, and which tends to become the more benignant and less alarming, the less pessimistically it is regarded.²⁹

Although demoniacal possession has no special place in the *Varieties*, this work as a whole and in all its parts sparkles with appreciative accounts of abnormal phenomena. To specify details would necessitate reproducing the table of contents; moreover, such specification would be unfruitful without close interpretation. The reason is that the material of the *Varieties* is almost exclusively descriptive; systematic psychological interpretation is often lacking; principles from the *Principles* are not productively applied except in a general sense.

Nevertheless, some account of the material is in order. As Uren’s analysis presents them, James’s varieties of religious experience are: the conversion experience, pre-conversion experiences, concomitant experiences, post-conversion experiences, the healthy-minded experience, and the mystic experience.³⁰ A familiar distinction is James’s

²⁶ James, H. *The literary remains of Henry James*. Edited with an introduction by William James. Boston: Osgood, 1885, Introduction, p. 119.

²⁷ Perry, *op. cit.*, II, p. 325.

²⁸ *Ibid.*, II, p. 5.

²⁹ *Letters*, II, p. 56

³⁰ Uren, A. R. *Recent religious psychology*. New York: Scribners’, 1928, pp. 80-84.

consideration that in their religious development some people are "twice-born"—subject to the conversion experience—while others are "once-born" unto healthy-minded growth of the religious life. Mysticism may be involved in both types of development. The book is characterized by the pluralistic openness of view, which is justified by the logic of pragmatism;³¹ as a result, the most famous psychological feature of James's study of religion is produced.

It is also to many the noisiest skeleton in his psychological closet, consisting as it does of the hypothesis of the "subconscious self" as a religious function. After analyzing the psychology of conversion by portraying the development and ultimate appropriation of that constellation called the "new life," in which process subconscious operations play an important role, he advances this proposal:

The *subconscious self* is nowadays a well-accredited psychological entity; and I believe that in it we have exactly the mediating term required

—for joining the individual, through a pragmatically justified "over-belief," to God.³²

There is no need here to dwell on the rattlings produced by the skeleton. Suffice it to point out that however well-accredited a psychological entity the subconscious self may have been in 1902, by 1910 the concept occasioned serious disagreement as to its psychological status, let alone its metaphysical implications. And in more recent years the advent of depth psychology has largely relegated the concept to terminological limbo. The point arising for present consideration, and the point at which we turn away from James as an abnormal psychologist, is that for most psychologists and psychiatrists the *abnormal* has continued to have a "sinister" import. In the 1910 symposium Janet rendered this opinion:

Clear-cut phenomena truly comparable to the subconsciousness of hysterics are infinitely rare in the normal mind. When they are really noted by competent observers they must be regarded as unhealthy accidents of a more or less transient character, and in general, as I have always observed, of a somewhat sinister omen.³³

Though its influence is still apparent in ways that we shall next examine, the psychology of William James somewhere suffered dissociation from the stream of consciousness of the psychological world.

³¹ *Varieties*, p. 522 ff.

³² *Ibid.*, p. 511.

³³ Münsterberg, H., Ribot, T., Jastrow, J., Janet, P., Hart, B., & Prince, M. *Subconscious phenomena*. Boston: Richard G Badger, 1910, p. 68.

In approaching those interests of James's which are related to social psychology, we remember that he regarded the *Varieties* as a contribution to abnormal rather than to social psychology. At the commencement of its first lecture he said: "If the inquiry be psychological, not religious institutions, but rather religious feelings and religious impulses must be its subject."⁸⁴ To James the individualist, such feelings and impulses were primarily of individual importance. The *psychology of religion* is one source of modern social psychology, however; the term was introduced in 1899 by Starbuck and by de la Grasserie, although work in the field, often involving the social side, goes back to 1890.⁸⁵ It might be contended that the *Varieties* was not a psychology of religion at all but rather, to paraphrase Brett, a psychological delineation of religious persons. Nevertheless it has usually been rated a pioneer contribution. Müller-Freienfels differentiates three phases of the psychology of religion as the theological, the social psychological, and the *differential* psychological, placing James in the last category.⁸⁶ It would be natural to expect the *Varieties* to deal with social material, in part from a social point of view. But such is not the case. On one occasion James was criticized for neglecting religion as a whole "in that his purview was exclusively that of the American Protestant of the conversionist type,"⁸⁷ which criticism James seems to have acknowledged in anticipation, however, by applying it to Starbuck's book before writing his own.⁸⁸ A more profound protest, which grapples directly with the social issue, was uttered by Stanton Coit:

If it were impossible for Professor James to see the whole historic truth that personal experience comes from church organisation as much as church organisation grows out of someone's personal experience—if he could only see half of this truth—it is a great pity that he should have seen the less significant part, and devoted his popular gifts to that side of it which can never bear fruit into life.⁸⁹

Although this expression of the complaint is naïvely petulant, the complaint itself thrusts home to strike a consistent characteristic of

⁸⁴ *Varieties*, p. 3.

⁸⁵ Gruehn, W. *Religionspsychologie*. Breslau: Ferdinand Hirt, 1926, p. 17.

⁸⁶ Müller-Freienfels, R. *Psychologie der Religion*. Berlin: Vereinigung Wiss. Verleger, 1920, Vol. I, p. 21.

⁸⁷ Webb, C. C. J. *Group theories of religion and the individual*. London: Allen and Unwin, 1916, p. 63.

⁸⁸ Starbuck, E. D. *The psychology of religion*. With a preface by William James. New York: Scribners, 1900, Preface, p. viii.

⁸⁹ Coit, S. *National idealism and a state church*. London: Williams and Norgate, 1907, p. 5.

James's thought and outlook. This is the ingrained *individualism* that he absorbed in youth from his father's fierce faith in liberty-under-transcendence (the son rejecting the transcendence), that uniquely shaped his conception of psychology, that led him to value "varieties" of experience, that belabored the Absolute, that opened his sympathies to the underdog, that sought personal life beyond death, that kept him still apart from the mysticism of his heart's desire, and that drove him at last to seek refuge on his Fechnerized mountain-tops of pluralism. In the area of religion as nowhere else this characteristic is relentlessly spotlighted. Confronted in Pratt's questionnaire (1904) with this question: "Or do you not so much *believe* in God as want to *use* Him?"—James replied: "I can't use Him very definitely, yet I believe," and went on to say that he felt in God "an ally of his own ideals."⁴⁰ The notion of *using* God was strangely remote for this psychologist who represented voluntarism, activism, and functionalism!

It is equally remote in the recitals of the *Varieties*. Pragmatism in religion requires, as far as individual interests are concerned, that God be useful or nothing, but it makes no special exactions on the side of *social* interests. Thus James, the arch-enemy of intellectualism and the proponent of action, while viewing religion sympathetically as a way of *experiencing* life, misses its meaning as a way of organizing one's motivation for active living. He wrote:

Psychologically and in principle, the precept "Love your enemies" is not self-contradictory. It is merely the extreme limit of a kind of magnanimity with which, in the shape of pitying tolerance of our oppressors, we are familiar. Yet if radically followed, it would involve such a breach with our instinctive springs of action as a whole, and with the present world's arrangements, that a critical point would practically be passed, and we should be born into another kingdom of being.

These words might have prefaced some recognition of the processes that would actualize the "radical following" of the precept. Instead, the very next sentence "pulls the punch" of action and delivers a love-tap of sentimentality: "Religious emotion makes us feel that other kingdom to be close at hand, within our reach."⁴¹ To the dispossessed, mere feeling is an unsubstantial boon. One begins to wonder if the chapter on mysticism should not have discussed besides nitrous oxide, alcohol, and mescal, the unfruitful alchemy of "opium for the people"!

⁴⁰ *Letters*, II, p. 214.

⁴¹ *Varieties*, p. 284.

Perhaps the closest James came to recognizing the potentialities of religion as a social function was when he compared "the Utopian dreams of social justice in which . . . socialists and anarchists indulge" to "the saint's belief in an existent kingdom of heaven." These dreams "help to break the edge of the general reign of hardness, and are slow leavens of a better order."⁴² For the son of a man whose one reiterated evangel was "society the redeemed form of man," and for a pragmatist who derided Emerson's "platonic formulas" in favor of the heat of Carlyle,⁴³ such subjective sentimentality of approach to the dynamic mysteries of religion is indeed shockingly remote. Yet what counted for James about religion was "the way an individual's life comes home to *him*, his intimate needs, ideals, desolations, consolations, failures, successes."⁴⁴ The attitude is not merely a matter of definition: it is expressed elsewhere. In the *Principles* we are informed that

the impulse to pray is a necessary consequence of the fact that whilst the innermost of the empirical selves of a man is a Self of the *social* sort, it yet can find its only adequate *Socius* in an ideal world.⁴⁵

Later we must investigate the "self of the social sort"; meanwhile, in our search for James's contributions to social psychology we shall find facts that reveal another kind of social obtuseness.

James, more than many academic personages, was often absorbed in practical social interests, and his general psychological theory was suited to the explanation of social phenomena. Outstandingly sociable by nature,⁴⁶ he was ever sensitive to the social meanings and political implications of the life around him, in diverse concrete situations, and on both a national and an international scale. Specific concerns included imperialism, jingoism, militarism, lynching, morale, education, mental hygiene; the philosopher's problem of individualities-in-unity was far from being a dead abstraction.⁴⁷ James frequently yielded to the impulse to rehabilitate backwoods philosophers, diamonds-in-the-rough, "lame ducks" who might yet astonish the world if given the chance.⁴⁸ When he traveled in the West he responded to the call of a larger patriotism; his revelatory group-experience of Chautauqua is well known. Nevertheless his

⁴² *Ibid.*, p. 360.

⁴³ Perry, *op. cit.*, I, pp. 144, 145.

⁴⁴ *Ibid.*, II, p. 329.

⁴⁵ *Principles*, I, p. 316.

⁴⁶ Perry, *op. cit.*, II, p. 694.

⁴⁷ *Ibid.*, Ch. LXVIII.

⁴⁸ *Letters*, I, p. 292.

sociality retained a curious mingling of "substance and shadow"; as a collector of experiences he did not always share them, while as an apostle of activism he often failed to participate convincingly. The paradox is no trivial oddity; we noticed a form of it in connection with religion, and Professor Perry has explored it deeply in presenting James and Royce as complementary personalities and influences.⁴⁹

About 1904 James became interested in the project to which he referred variously as a "Psychology of Jingoism" and a "Varieties of Military Experience."⁵⁰ The famous essays *The Energies of Men* and *The Moral Equivalent of War* are regarded as partial results of this enterprise, which otherwise survives only in the form of miscellaneous notes.⁵¹ *On Some Mental Effects of the Earthquake* was the record published a few months afterwards, of some of James's observations of the cataclysm in 1906 which interrupted his philosophical lecturing at Stanford University.⁵² A lengthy study could and should be made of the social psychological implications of James's treatment of the sample topics here cited, as well as of other items of similar interest. While unquestionably rewarding, the task would be laborious, for just as in the case of his religious and psychopathological studies, James omitted in these treatments of social themes to make psychological analyses in terms of the rubrics of psychological theory.

A few selected passages will reveal the kind of social psychology he might have written had he employed a technical vocabulary of interpretation. In reference to lynching he once wrote to a newspaper:

The water-tight compartment in which the carnivore within us is confined is artificial and not organic. The slightest diminution of external pressure, the slightest loophole of licensed exception, will make the whole system leaky, and murder will again grow rampant. It is where the impulse is collective, and the murder is regarded as a punitive or protective duty, that the peril to civilization is greatest. Then, as in the hereditary vendetta, in dueling, in religious massacre,

⁴⁹ Perry, R. B. *In the spirit of William James*. New Haven: Yale Univ. Press, 1938, Ch. I.

Royce the collectivist and metaphysical idealist, as much preoccupied with the community as was James with the individual, sought deliberately in his *Problem of Christianity* to correct the "ultra-individualism" of James's *Varieties*. For his pains he received from Webb, who had criticized James's social neglect, the complaint that he should have "brought into more explicit relation with his doctrine of the Community the doctrine of the individual as the expression of a unique purpose." *Op. cit.*, p. 192.

⁵⁰ *Letters*, II, p. 284.

⁵¹ Perry, R. B. *The thought and character of William James*, Vol. II, p. 272.

⁵² The three essays mentioned may be found in James, W., *Memories and studies*. New York: Longmans, Green, 1911.

history shows how difficult it is to exterminate a homicidal custom which is once established.⁵³

This depiction of social tensions, so reminiscent of some of Jung's descriptions of the contents of the collective unconscious, teems with allusions to psychological processes that deserve systematization. Similar vignettes are scattered through everything James wrote, regardless of subject-matter. In a letter to a friend these suggestive words occur: "We are all ready to be savage in *some* cause. The difference between a good man and a bad one is the choice of the cause."⁵⁴ This statement possesses a flavor of consistency with technical material in the *Principles of Psychology*. One more example may be given:

I am against bigness and greatness in all their forms, and with the invisible molecular moral forces that work from individual to individual, stealing in through the crannies of the world like so many soft rootlets, or like the capillary oozing of water, and yet rending the hardest monuments of man's pride, if you give them time. The bigger the unit you deal with, the hollower, the more brutal, the more mendacious is the life displayed.⁵⁵

The imaginative psychologist who undertakes to unravel the poetry will discern in this the makings of a theory of social interaction, a dynamics of motivation, a principle of social determination, and a conception of collective reintegration.

Like the psychology of religion, official social psychology, stemming variously from the anthropology, sociology, and biological evolutionism of the nineteenth century, began to take distinctive shape in the last decade of that century. In 1908 Ross published the first *Social Psychology*, in which he sought to account for "uniformities" of experience in the "planes and currents" of social life.⁵⁶ In the same year McDougall produced his pioneer contribution in an effort to aid the social sciences to "build upon a firm psychological foundation."⁵⁷ For both these enterprises psychological principles were needed. Was there anything answering the purpose in James's *Principles* of 1890?

Going straight to the point, McDougall emphasized the need for liberation from intellectualistic mental philosophies:

Nor are we any longer content to supplement this Lockian conception of mind with only two principles of intrinsic activity, that of the association and reproduc-

⁵³ Perry, *op. cit.*, II, p. 317.

⁵⁴ *Letters*, II, p. 28.

⁵⁵ *Ibid.*, II, 90.

⁵⁶ Ross, E. A. *Social psychology*. New York: Macmillan, 1908, pp. 1, 2.

⁵⁷ McDougall, W. *An introduction to social psychology*. (14th ed.) Boston: Luce, 1921, p. 3.

tion of ideas, and that of the tendency to seek pleasure and to avoid pain. The discovery is being made that the old psychologising was like the playing of "Hamlet" with the Prince of Denmark left out.⁵⁸

If any psychologist had already insisted that every psychological drama must be played with a full cast, it was William James. In particular, his "stream of consciousness" had risen to engulf the wreckage of apperceptionism, and he had ingenuously eroded the foundations of hedonism by characteristically inquiring: "Who blushes to escape the discomfort of not blushing?"⁵⁹ The anti-intellectualism of James's non-conformist trend in psychology and philosophy needs no recapitulation here. It is inherent in functionalism and it reached a climax in the theory of emotions. The James who demanded a universe that was "thickly alive"⁶⁰ had perceived at the outset the need for a psychological *Lebensraum* that might among other things be adequately *social*.

The theater of life-as-a-whole, the setting for varieties of experience, while rich in reverberations of social movements, becomes such because it is peopled with *individualities*. Since James was thoroughly preoccupied with the individual and his interests, it was inevitable that he should offer some elaboration of his observations about individuals. The result was the rendering of miscellaneous contributions to the field of *personality*, that ugly duckling of social psychology which in its present swanhood is being coaxed back into the family circle. Since James was ahead of the times in pursuing this interest, his contributions were largely of the characterological kind. There are the numerous *types*, such as the tough-minded and the tender-minded, the once-born and the twice-born, the sympathetic and the unsympathetic character, the obstructed and the explosive types, besides frequent characterization of the representatives of nationalities and other social groups. To the Jamesian "selves" we must proceed in a moment. James was interested in physiognomy and phrenology as characterological devices, and in keeping with this interest he maintained a large collection of photographs of people. Needless to say, the profusion of delineations of concrete personalities to be found throughout his writings is a relevant psychological tributary.

Of the famous hierarchy of selves, comprising the material self,

⁵⁸ *Ibid.*, p. 16.

⁵⁹ *Principles*, II, p. 550.

⁶⁰ James, W. *A pluralistic universe*. New York: Longmans, Green, 1909, p. 173.

the social self, the spiritual self, and the pure ego, the *social self* receives at the outset a completely biosocial definition as "the recognition which a man gets from his mates."⁶¹ This self—or rather *these selves*, since they are as many as there are individual "mates" who regard one—is, however, immediately reestablished as a biophysical entity in terms of its central and generating motive. This is the "innate propensity to get ourselves noticed, and noticed favorably."⁶² The plot thickens; it now begins to be clear *why* man's innermost selves *can find their only adequate socius in an ideal world!* Again we encounter the individualistic isolationism that was seen to pervade James's psychology of religion, and that affects his metaphysics by creating the problem which he sought to resolve through pluralism. The passage which enlarges upon the social self is striking for its descriptive language. Reiterated throughout it are references and appeals to *fame, honor, club-opinion, self-satisfaction, self-exaltation*. Elsewhere James treats us to similar verbal exhibits, notably in the case of the repeated references to *shyness* with which the treatment of instincts abounds.⁶³ In the description of the instincts, four words are allotted to *jealousy*—"Jealousy is unquestionably instinctive."⁶⁴ *Rivalry* is given similar short but emphatic shrift, one of the five descriptive sentences being: "Nine-tenths of the work of the world is done by it."⁶⁵ And in a biologicistic account of the dynamic functioning of the self James states that the sympathetic and egoistic instincts differ only in that "the instincts called egoistic form much the larger mass."⁶⁶

Many other details of James's psychological individualism might be mentioned—such as his strange inclusion of an "anti-sexual instinct, the instinct of personal isolation"⁶⁷—but these instances characterize its trend. A clinical psychologist cannot regard emphasis on egocentric tendencies and emphasis on withdrawing tendencies as unrelated phenomena. In clinical observation such varieties of experience do not flourish in fine pluralistic disjunction. We begin, then, to grasp a likely key not only to the neglect of social psychology by William James, but to the philosophical drama

⁶¹ *Principles*, I, p. 293.

⁶² *Idem*.

⁶³ See the *Principles*, II, pp. 432, 433, 436, 437.

⁶⁴ *Ibid.*, II, p. 439.

⁶⁵ *Ibid.*, II, p. 409.

⁶⁶ *Ibid.*, I, p. 325.

⁶⁷ *Ibid.*, II, p. 437.

he produced after he ceased to deal in strictly psychological categories!

From the point of view of social psychology the great weakness in James's outlook is an inadequate conception of social stimulation, which leads to a disregard of social interaction. Although minds are "related to other minds,"⁶⁸ and although we have described James's total problem as that of individualities-in-unity, direct psychological relations between individualities are practically ignored by James. Social facilitation is recognized under the heading *Play*.⁶⁹ Otherwise we are informed that

in the present world, then, minds precede, succeed, and coexist with each other in the common receptacle of time, and of their *collective* relations to the latter nothing more can be said.⁷⁰

James deposits the burden of psychological functioning squarely upon the individual.

As regards James the man, the nub of the whole matter—referring to the inconsistencies, contradictions, paradoxes, and struggles that highlighted his intellectual history—was his restricted social outlook. But this "asociality" was far from absolute. Although the chapter on the "Consciousness of Self" is a masterpiece of apologetics for egocentrism it must not be thought that James represented cheap egoism, either in psychology or in religion. In numerous contexts he warmly acclaims self-sacrificing and self-renouncing behavior, notably in the discussion of "Mysticism" in the *Varieties*. The peculiarity of this recognition, especially as accorded by one who in his personal life constantly did things for other people, consists in the *egocentric motivational* pattern ascribed to altruistic conduct.

But what of the instincts? Do they *condemn* the individual to egocentric isolation? Is no broader scheme of motivation possible? As far as James's theory of instincts is concerned wider possibilities exist. Like McDougall, he acknowledged a large number of instincts—about twenty besides physiological reflexes. These were the actual "springs of action," affected, of course, in their operation, by stimulus situations. There are two important differences from McDougall's system: (1) To James, the driving forces were not introspectible: "The *impulsive quality* of mental states is an attri-

⁶⁸ *Ibid.*, I, p. 216.

⁶⁹ *Ibid.*, II, p. 428.

⁷⁰ *Ibid.*, I, p. 199.

bute behind which we cannot go." Nor was their innate character to be insisted upon: "However the actual impulsions may have arisen, they must now be described as they exist"; it is the business of "evolutionary history" to explain their derivation.⁷¹ (2) Instincts were *transitory* rather than permanent; they were subject of *inhibition by habits*.⁷² This conception makes room for an endless dynamic interplay of motivational factors, working toward the emergence of formations like fixed ideas, states of consciousness, etc., and as we should nowadays wish to add, traits of personality. The doctrine of the transitoriness of instincts is indeed a rough prototype of that of the *functional autonomy of motives* which is the core of G. W. Allport's psychological theory of personality.⁷³

Keeping in mind the bearing of motivation upon religion as a mode of behavior that renounces the ego, we should notice a fundamental difference between the James prototype and Allport's theory. Fiercely intent upon authenticating the self-conscious interests of the individual, James kept announcing that psychological states and processes were always personal, were subject to ownership.⁷⁴ With no less personalistic emphasis, Allport, however, through his principle of the "extension of self," proposes that *devotion* be taken as a mark of maturity of the personality, by insisting that objects of mature regard are best sought *for their own sake*.⁷⁵ In practice, such devotion to larger ends is achieved through socializing conduct that bursts the confines of primordial egocentricity. This shift in proprietary interest is the psychological mystery that Henry James, Sr., continually celebrated in his writings.⁷⁶ It means the renunciation of self, but not for the sake of self. And metaphysically considered it is the kind of relation that *preserves* individuality by freeing the self at the expense of the ego, and lets pluralism come of age. It is in no wise clear that William James attained it. Despite the fact that his theory of motivation allowed for a principle of "extension of self" (which he did not formulate), his psychology was egocentric. Witness this version of "renunciation":

We must care more for our honor, our friends, our human ties, than for a sound skin or wealth. And the spiritual self is so supremely precious that, rather than

⁷¹ *Ibid.*, II, p. 551.

⁷² *Ibid.*, II, pp. 398-402.

⁷³ Allport, G. W. *Personality: a psychological interpretation*. New York: Holt, 1937, pp. 196-211.

⁷⁴ *E.g.*, *Principles*, I, p. 226.

⁷⁵ Allport, *op. cit.*, p. 217.

⁷⁶ James, H. *The literary remains of Henry James*. Edited with an introduction by William James. Boston: Osgood, 1885. *Passim*.

lose it, a man ought to be willing to give up friends and good fame, and property, and life itself.⁷⁷

Here everything would seem to depend on the degree of *extension* of the self one cannot afford to lose.

We thus encounter in James's writings a coexistence of egocentric and withdrawing tendencies, and we have commented on the clinical relationship. We have also emphasized James's social aloofness in his psychology of religion and elsewhere. Are these phenomena connected with his wholly amiable but consistently asserted non-comprehension of his father's thought? How are we to relate the father's emphasis on renunciation-for-society to the son's individualism?

Concerning the home life of William James and his brother Henry, Jr., Professor Perry states that "the stage seems to have been set for an 'inferiority' complex"—on the part of Henry, Jr., and goes on to explain that, "incredible as it may seem," it did not develop;⁷⁸ although the subsequent description of Henry's life indicates that it *did* develop. But from a clinical point of view, what seems more important is the fact that as the *older* child, *William* might "normally" be the one to manifest any effects of displacement by a sibling, through feelings of inferiority or other symptoms. Might not his later urbanity and studied absence of discrimination in social relations have amounted to *compensation* for feelings of inferiority? How should the individualistic, egocentric attitude be interpreted? And is there no ground for supposing that, if Henry displaced William, the latter would develop resistance to the father? Such conjectures demand investigation, especially when one also remembers William James's invalidism and neurasthenia, and the apparently salutary effect of his marriage. All that is contended here, however, is that in the dynamics of the interpersonal relationships there is significant evidence which accounts in part for William James's psychological and metaphysical exertions in behalf of individuality. His devotion to and interpretation of individuality, moreover, restricted his possible contributions to abnormal and social psychology.

⁷⁷ *Principles*, I, p. 315.

⁷⁸ Perry, *op. cit.*, I, 174.

EGO-INVOLVEMENT AS A DETERMINANT OF SELECTIVE FORGETTING

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To those who have been amused at the fisherman's overestimation of the traditional "one that got away" it is no novel hypothesis that alterations and selections in remembered material may be produced by attitudes and interests. The production and measurement of such alterations, however, is not common. The stimulating researches of Bartlett (2) provide clear indication that factors in individual personal history are responsible for some of the changes occurring in the content of delayed reproductions, but he reports no attempt at exact measurement of the changes or of their determinants.

In an interesting paper dealing with the influence of set on report, Maria Zillig (10) records an experiment in which aphorisms written by prominent authors were used as memory material. Half of them expressed opinions favorable to the female sex; half derided it. Twenty men and an equal number of women were asked to read the statements and, immediately after reading, to write them from memory. When reproductions made by the two sexes were compared, it was found that of all statements recalled literally by male subjects only 37 per cent were favorable to women. On the other hand, 63 per cent of the aphorisms recalled by female subjects were favorable to their sex. This discrepancy is accounted for by assuming that individuals possess "basic sets" of striving for personal advancement and against injury and that these sets exert a selective influence in recall. The women accordingly rejected (unintentionally) statements conflicting with their pride in their own sex.

Suggestive as this work is, it suffers from failure to specify the subjects' attitudes in advance of the presentation of the memory material and to allow for the different degrees of mastery to which subjects may have learned the aphorisms prior to the experiment proper.

Although Edwards (3) measured the attitudes of his subjects before presentation of the memory material, he reports no attempt to control the factor of previous learning. In his study a ten-minute speech containing an equal number of both pro- and anti-

New Deal statements was read to the subjects. Immediate and delayed tests of forgetting showed that the portions of the speech which harmonized with subjects' attitudes were remembered better than portions which conflicted with them. For example, it was found that subjects who favored the New Deal remembered more of the favorable statements made in the speech than of the unfavorable ones. But it is probably true that at least some of the arguments presented were familiar to the subjects, and it is reasonable to believe that persons who favored the New Deal would have learned, even before the experiment began, more of the arguments which supported their views than arguments against them. Consequently the differential retention of the two kinds of statements could be accounted for on the basis of the advantage held by one kind of statement at the time of the speech. This study does not constitute adequate evidence of the role played by attitudes in selective forgetting.

In contrast, Watson and Hartmann (8) in their study of the effect of theistic and atheistic attitudes did use a technique which controlled differences in the subjects' familiarity with the arguments comprising the memory material. They found some evidence that arguments supporting the subjects' attitudes were recalled better (after an interval of from 10 to 30 minutes) than those opposing the attitudes, but their results are not acceptably reliable from the statistical standpoint.

The influence of attitude toward the Negro on remembering was studied by Margulies (6). There is no clear evidence in her work that material supporting an attitude is recalled better than material opposing it. Part of the difficulty would seem to lie in the use of an immediate test; for the phenomena in question require a certain amount of time for their production. Gilbert (4), reviewing studies of hedonic selectivity in remembering, points out that results based on immediate testing are inconclusive. An experiment preliminary to those reported in the present paper also disclosed that immediate testing, although showing some differential recall, yielded inconsistent and ambiguous results.

Despite the plausibility of the hypothesis which we have been discussing, experimental results to date have not provided a good case for its acceptance. The investigations here reported present additional data relevant to the belief that attitudes may exert a selective influence on remembered material.

PLAN OF THE INVESTIGATION

If selection in forgetting can occur as the result of attitudinal factors, we should select for study some attitude which will provide nearly optimum conditions for producing it. Presumably, such an attitude would be one intimately related to the person—one which is “deep” rather than “superficial.” For this reason the present study utilizes attitudes toward the self.

Whatever point of view one may hold concerning the ontological or the epistemological status of the self, it will be agreed that individuals can and do make descriptive statements about themselves. These descriptions are sometimes overt; more often, perhaps, they are not communicated. In content they may range from the merest naming of bodily characteristics to complicated and abstract evaluations such as “I am a moral coward.” As grounds for inferences about attitudes such statements are entitled to the same consideration as those in which the speaker is not the object of description, *e.g.*, “War is an economic necessity.” In this sense, then, it is meaningful to say that a person has certain attitudes toward himself. This is not meant to imply that the self as studied by psychology is to be identified with a set of statements, but it is meant to point out that it is possible to deal with problems of the self even while confining ourselves to statements. True, statements about the self may be and often are false-to-facts or even intentionally deceptive; but this in no way distinguishes them from other judgments nor seriously impairs their value as psychological data.

In the experiments to be reported a check-list of 40 adjectives was used to obtain some self-evaluations of the subjects. They were given the list and were asked to mark a “plus” beside those words which they thought described them and a “zero” beside those which did not describe them. Subjects were encouraged to be sincere and were told that the papers would be treated as confidential information. Two groups designated as the “rated” and “non-rated” groups were then formed. The difference between them will be made clear later.

About a week after the self-ratings, each person in the rated group was given a sheet containing his name and a set of numbered spaces marked plus or zero. The subjects were then told that they had been rated by some person who knew them and that these sheets contained the record of the rating. The numbers cor-

responded to the terms on which they had been rated, the same list, in fact, which they had used for rating themselves. Wherever a plus occurred it indicated that the unknown rater considered that particular term descriptive of the subject. Subjects were requested to look at their own papers while the experimenter read the list of trait words corresponding to the numbers on those papers. Thus each subject could see which traits had been attributed to him by his rater. For example, subject A could see that number 4 on his sheet was marked plus. In the list read by the experimenter the fourth word was "cautious." Consequently, subject A would know that whoever had rated him thought he was cautious.

This method allows the exposure of different material to each subject while retaining the convenience of working with a group. It also permits control of rate and time of exposure. The list was read twice at the rate of about one word every two or three seconds. The ratings were collected immediately following the reading.

These ratings were not genuine. Actually they had been constructed by systematically changing the self-ratings. For half the subjects the ratings on items 1, 2, 5, 6, 9, 10, etc., had been reversed, while the others remained the same. The ratings on items 3, 4, 7, 8, 11, 12, etc., were altered for the other half of the subjects. Thus each paper contained some ratings which were identical with those of the subject and some which exactly contradicted his own ratings. This "bogus" rating, as it will be called to distinguish it from the self-rating, was what the subjects were later asked to recall. After the desired interval had elapsed, subjects were asked to recall the marks assigned them by their unknown raters. Recalls were written on a sheet containing all the adjectives used in the original list.

In order to create the impression that the bogus ratings are genuine it is helpful to use traits that are hard to observe objectively. Thus "wistful" or "adaptable" may mean many things to many people, and it is not difficult to convince a subject that he could receive a rating opposed to his own. This is not so true of terms such as "good-looking" or "ill-bred." Our list contained as many ambiguous terms as possible.

In addition to the above precaution special measures were taken to create a belief that the bogus ratings were genuine. Since students in a large university realize that instructors do not know their acquaintances, each subject was required to list the names of at least five people on the campus who knew him. These lists were

made at least a week before the self-ratings were filled out, and nothing was said about their purpose. The bogus sheets as presented contained instructions worded to make the subjects believe that they had actually been distributed to raters. The sheets were also creased as they might have been had they been sent through the campus mail.¹

THE FIRST EXPERIMENT

The subjects of the first experiment were 111 students enrolled in the summer session at Ohio State University.² The rated group totaled 84, the non-rated 27. There were 8 male subjects in each group. The age range in the rated group was from 18-49 years, with a median age of 26. In the non-rated group the range was from 19-46 years, with a median of 27. Many of the subjects were adults with some teaching experience.

Recall was delayed for 48 hours in this experiment. As soon as the subjects finished recalling the bogus items, they were asked to mark each adjective desirable or undesirable. After collecting the papers, the experimenter revealed the actual nature of the experiment and told the subjects that the ratings were not genuine.

Since the data resulting from our procedure are unavoidably complex, it may be well to introduce a system of symbols which will do away with awkward expressions and make for brevity in presenting the results. Each term on the check-list may be classified in one of two ways for each of the three factors we have varied. That is, each term may be called desirable or undesirable; it may be checked or unchecked on the self-rating; it may be checked or unchecked on the bogus rating. Taking three two-categorized variables three at a time, we arrive at eight possible combinations. Considering all three of our factors, then, each recall is the recall of an item belonging to one of eight classes. We shall use "D" or "U" to indicate whether a subject considered a trait desirable or undesirable. To show whether or not a term on one of the ratings applied to the subject, we shall employ "x" or "o." If the "x" occurs immediately following the "D" or "U," it will mean that

¹ One girl after receiving her bogus rating complained to the instructor that the person who had rated her must not have known her very well. Two days later, informed of the true nature of the bogus sheet, she reported that she had been almost physically ill as a result of worry over the mistaken opinions held by her rater. It had not occurred to her that the ratings were not genuine.

² The author wishes to acknowledge the kind assistance of Dr. H. C. Lehman, Mr. Claude Bridges, and Mr. Nicholas Hobbs in collecting the data.

the *self*-rating was checked; placed in the next position following it will mean that the *bogus* rating was checked.

Suppose that a subject considers a certain trait—say “adaptable”—desirable and so rates himself. Suppose further that he is “rated” thus on the bogus rating. All cases with a similar pattern of relations are symbolized “Dxx.” For the trait “plodding,” however, he indicates that the term does not describe him. The bogus rating contradicts him and indicates that the term does describe him. Since he has judged this trait undesirable, his recall for this item would fall in the class Uox. Type Uoo would differ only in that the bogus rating did not attribute the trait to him.

The symbols for the eight item types are: Dxx, Dxo, Dox, Doo, Uxx, Uxo, Uox, Uoo. These symbols are used whether the bogus rating is that employed with the rated group or that used with the non-rated group.

We may now restate our problem in terms of the types of items just discussed: Will reliable differences in the proportion of ratings correctly recalled be found among the various types of items? If such differences be discovered, can they be related to the self-attitudes of the subjects in such a way as to yield consistent generalizations about the effect of such attitudes on material related to them?

Results. Table 1 shows the number of items of each type and the percentage of errors made in the recall of each type for both

TABLE 1

THE NUMBER OF EACH TYPE OF ITEM AND THE PERCENTAGE OF ERRORS MADE
IN 48-HOUR DELAYED RECALL OF EACH TYPE BY THE
RATED AND NON-RATED GROUPS

TYPE	RATED GROUP		NON-RATED GROUP	
	TOTAL	PERCENTAGE WRONG	TOTAL	PERCENTAGE WRONG
Dxx	755	13.6	215	23.7
Uxx	166	18.7	59	47.5
Dxo	699	25.6	210	38.6
Uxo	216	25.5	62	25.8
Dox	180	19.4	70	31.4
Uox	626	23.2	212	53.8
Doo	117	17.1	64	26.7
Uoo	601	16.6	188	21.3
Total	3360	19.9	1080	34.2

rated and non-rated groups. The rated group has more accuracy in over-all recall than the non-rated group, *i.e.*, 19.9 per cent errors as compared with 34.2 per cent for the latter group ($C.R.=8.2$). This difference probably reflects the superior initial learning of the rated group due, perhaps, to their greater interest and attention during the reading of the bogus ratings.

In the tradition of the P-U studies of forgetting we inquire first into the effect of desirability on accuracy of recall. Since there are unequal frequencies in the eight classes, and, since the effect of other variables is as yet unknown, sampling error must be avoided

TABLE 2

THE RELATIONSHIP BETWEEN THE DESIRABILITY OF ITEMS AND THE PROPORTION OF ERRORS MADE IN 48-HOUR DELAYED RECALL

TYPE	RATED GROUP ERRORS (Percentages)	CHI- SQUARE	NON-RATED GROUP ERRORS (Percentages)	CHI- SQUARE
Dxx Uxx	13.6 18.7	2.7	23.7 47.5	12.7
Dxo Uxo	25.6 25.5		38.6 25.8	
Dox Uox	19.4 23.2	1.1	31.4 53.8	10.5
Doo Uoo	17.1 16.6		26.7 21.3	

by comparing those types which differ in only one respect, desirability. Table 2 makes the needed comparisons for both groups. It will be seen that there is no evidence of a relationship between desirability and forgetting in the rated group. This is not true of the non-rated subjects, however, for in those cases where the bogus was checked the desirable items show reliably better recall than the undesirable ones. This is baffling. From the data at hand we cannot specify the frame of reference toward which the selective forgetting tends other than to say that it is probably not the one which is operative in the rated group. It may be that these results are similar to the "halo-effect." Perhaps the subjects overflow with human kindness to the extent that they forget the shortcomings of unknown persons, or that, having forgotten the bogus ratings rather effectively, they "rate" the unknown in favorable terms.

Knowing that, in the rated group, desirability bears no relation to forgetting, we may proceed to combine desirable and undesirable item types and test for a relationship between forgetting and the agreement of the self- and bogus ratings. The results are given in Table 3. In every comparison there is a reliably smaller proportion of errors when the self- and bogus ratings agree than when they disagree. There is no confounding in any of the comparisons due to a tendency to favor either the check or the zero in marking the recall sheets. On the bogus sheets 48.6 per cent of the items were marked zero, and 47.4 per cent were so marked on the recall. This unreliable difference shows no tendency to favor either marking.

TABLE 3

THE RELATIONSHIP BETWEEN AGREEMENT OF THE SELF- AND BOGUS RATINGS
AND THE PROPORTION OF ERRORS MADE IN 48-HOUR
DELAYED RECALL BY THE RATED GROUP

TYPE	ERRORS (Percentage)	CHI-SQUARE
xx	14.5	34.8
xo	25.6	
ox	22.3	7.6
oo	16.7	
xx	14.5	17.5
ox	22.3	
xo	25.6	18.6
oo	16.7	

Clearly, the figures in Table 3 are strong evidence for the hypothesis that ratings intimately related to self-attitudes will be remembered better when they reinforce those attitudes than when they are in opposition.

With the data from the non-rated group it is not possible to use the simple procedure followed in Table 3, since we found a differential effect due to trait-desirability which cuts across the agreement-disagreement comparisons. It is possible, nevertheless, to control the effect of desirability and test for effects due to agreement as shown in Table 4. Although two of the differences shown are reliable, and a third approaches the required level of significance ($P < .01$), only the comparison of types Dxx and Dxo can be used as positive evidence of an effect due to agreement of the two ratings.

This is due to the fact that, if there is a tendency to make more zeros during the recall than were on the bogus sheets, items marked zero on the bogus have a greater chance of being marked correctly when recall is tested. In this case 51.8 per cent of the bogus items were marked zero, and 57.8 per cent of the recalls were so marked (C.R.=2.7). As a result, any comparison involving item types not having the same bogus marking is equivocal and does not have satisfactory status as evidence.

TABLE 4

THE RELATIONSHIP BETWEEN AGREEMENT OF THE SELF- AND BOGUS RATINGS
AND THE PROPORTION OF ERRORS MADE IN 48-HOUR DELAYED
RECALL BY THE NON-RATED GROUP

TYPE	ERRORS (Percentage)	CHI-SQUARE
Dxx Dox	23.7 31.4	1.6
Uxx Uox	47.5 53.8	.7
Dxo Doo	38.6 26.7	2.9
Uxo Uoo	25.8 21.3	.5
Dxx Dxo	23.7 38.6	10.9
Uxx Uxo	47.5 25.8	6.1
Dox Doo	31.4 36.7	.4
Uox Uoo	53.8 21.3	44.4

We may conclude that the strong support which data from the rated group give our hypothesis is lacking in data from the non-rated group. This is the result expected if the self-attitudes of only the one group were involved in the remembering.

Summary. We believe the following conclusions are warranted:

1. Selective forgetting can occur in 48 hours.
2. One factor which may be involved in such forgetting is the relationship between the memory material and the self-evaluations of the subjects.

3. Selection of the kind found here does not result in the addition of favorable traits to the recalled bogus ratings unless the subject thinks he possesses those traits, nor does it result in the repression of undesirable traits which the subject acknowledges. It results rather in recalling the bogus rating in a form resembling the earlier self-rating. We do not, apparently, "remember" that others attribute impossible virtues to us, but we do distort the memory so that others are believed to see us as we think we are. Good, bad, indifferent, we project our opinion of ourselves upon the remembrance of ratings made by others.

4. Selection does not occur when the memory material is not closely related to the self-interests of the subjects.

THE SECOND EXPERIMENT

Having found clear evidence of differential forgetting when recall is delayed, we planned an experiment designed to separate the effects of factors operating at the time of immediate recall from the effects of those at work during the interval of delay. We sought also to confirm the results obtained with the rated group in the first experiment.

The subjects were 32 students enrolled in courses in elementary and educational psychology during the summer session at Ohio State University. Half the subjects were male. The age range was from 18 to 43 years, with a median of 22.5 years.

Except for the time of testing the procedure was that used in the first experiment. One recall was asked for immediately; seven days later a second test was given. The list of 40 traits was the same as that previously used.

Results. We omit the results of the immediate test. It is sufficient to report that in only one comparison (Dxx with Uxx) did item-desirability show a relationship to accuracy of recall. Desirable items in this case were recalled with significantly fewer errors than undesirable ones. Tests for a relationship between agreement of the self- and bogus ratings and errors made in immediate recall yielded negative results. Such an outcome was not unexpected in view of the outcome of preliminary work with immediate tests.

In order to discover what occurs during the period of delay we must somehow control or ignore influences at work during and immediately after the learning period. This can be done if we know the status of each item during each recall. Each item of the

learned material can have one of four possible fates. It may be recalled correctly on both tests or incorrectly on both; it may be recalled correctly on the first test only or on the second test only. Table 5 shows the number of items of various types which were remembered in each of these four ways. If we consider in our comparisons only those items which were correctly recalled on the first test, we shall have ignored factors which produce error in immediate recall. Presumably, then, errors made in the delayed recall of these items will be due only to factors operating *after* the immediate test.

Although it may be objected that such a procedure overlooks reminiscence, reference to the third column of Table 5 will show that it occurred too rarely to permit adequate analysis.

TABLE 5

THE NUMBER OF ITEMS OF EACH TYPE CORRECTLY RECALLED ON BOTH TESTS,
AND THE NUMBER WHICH WERE WRONG ON ONE OR BOTH TESTS
(Second experiment)

RECALL I RECALL II	RIGHT RIGHT	RIGHT WRONG	WRONG RIGHT	WRONG WRONG	TOTAL
TYPE					
Dxx	200	32	10	16	258
Uxx	53	9	3	15	80
Dxo	155	61	6	25	247
Uxo	60	24	3	7	94
Dox	67	14	1	14	96
Uox	115	59	7	29	210
Doo	56	5	3	6	70
Uoo	182	20	7	16	225
Total	888	224	40	128	1280

The first two columns in Table 5 give the number of right and wrong responses on the delayed test when only right responses on the immediate test are considered. We wish to see whether or not there are reliable differences in the proportion of these errors among the various types of items.

The first set of comparisons tests the effect of desirability on accuracy of recall. Table 6 presents the relevant data. Several points should be noted. In the first place, no reliable difference exists between errors in types Dxx and Uxx such as was found in

immediate recall. Secondly, a reliable difference in the proportion of errors in types Dox and Uox appears, although this was not true in immediate recall. The need for separating influences operating at the time of the immediate test from those occurring later is apparent.

TABLE 6

THE RELATIONSHIP BETWEEN THE DESIRABILITY OF ITEMS AND THE PROPORTION OF ERRORS MADE IN RECALL DELAYED ONE WEEK, BASED ONLY ON ITEMS CORRECTLY RECALLED IN THE IMMEDIATE TEST

TYPE	ERRORS (Percentage)	CHI-SQUARE
Dxx Uxx	13.8 14.5	.0
Dxo Uxo	28.2 28.6	.0
Dox Uox	17.3 33.9	7.5
Doo Uoo	8.2 9.9	.2

One of the best tests of an hedonic factor in forgetting is afforded by comparing errors in type Dox with those in type Uox. The first type indicates that a desirable trait is attributed to an individual who does not think it is characteristic of himself, while the second type indicates an undesirable trait similarly attributed. (It will be remembered that the judgment of desirability was made by the subject.) Table 6 shows that under these conditions the recall of desirable ratings is much more accurate than the recall of undesirable ratings. This is the first evidence in our work that something similar to repressive forgetting does occur. More important, however, is the fact that this kind of forgetting is not indicated by the three remaining comparisons. Such a state of affairs points to the possibility that special conditions may be requisites for repressive forgetting. On the basis of the analysis of Table 6 one may guess that one condition depends on the attitude of the individual toward the pleasant or unpleasant material. If the individual agrees with or accepts the unpleasant material, then rapid and complete forgetting of this material may not take place.

On the other hand it is possible that type Uox includes a larger

proportion of bogus ratings that are truly unpleasant than type Uxx. There is a decided tendency to assign oneself a large number of desirable traits. In this experiment about 75 per cent of all traits checked on the self-ratings were later judged desirable. In the light of this fact it seems altogether possible that the subjects acknowledged the possession of a few *slightly* undesirable traits, but refused to admit—or believe—that they have the highly undesirable ones. The bogus ratings, however, would attribute many of these highly undesirable traits to the subjects, since they were constructed according to a predetermined system which avoided selection of any particular kind of item. Therefore type Uox would probably include many more of the *most* undesirable items than would type Uxx.

In checking the tendency to favor either the plus or zero markings in the second recall it was found that no significant excess of either response occurred when only items which were right on the first recall were considered.

Comparisons testing the effect of agreement between the self- and bogus ratings on accuracy of recall are drawn in Table 7. Every comparison in this table indicates that when the two ratings disagree recall is less accurate than when they agree. All differences except those involving type Dox are highly reliable. The failure to obtain reliable differences in comparisons including type Dox should serve to remind us that the process we are studying does not occur in isolation, but on the contrary can be profoundly affected, perhaps even rendered inoperative at times, by other processes. Indeed, this fact is precisely the thesis of this report; human forgetting is forgetting by *persons*, people with biographies, individuals actively engaged in the business of coming to terms with an intricate pattern of social stimulation. It would be strange if the rich context of personality did not sometimes intrude upon schemes for "isolating the single variable." We have attempted to isolate one aspect of the context for study here; we cannot be surprised when another aspect eludes our efforts at control and intrudes.

The data of Table 7 in conjunction with those from the first experiment constitute, in our opinion, weighty evidence that forgetting can take place in such a way as to result in a production more like the subject's frame of reference than was the memory material. Further analysis involved finding (for each subject) the number of

items showing agreement between the self- and bogus ratings and the number showing agreement between the self-rating and the delayed recall. Greater similarity between the latter two than between the former two was found in 26 cases. Four cases showed no difference, and only two shifted in the direction of less similarity. Hence it is actually true for a large proportion of the group that the final production is more like the frame of reference (self-rating) than like the material presented (bogus rating).

TABLE 7

THE RELATIONSHIP BETWEEN AGREEMENT OF THE SELF- AND BOGUS RATINGS AND THE PROPORTION OF ERRORS MADE IN RECALL DELAYED ONE WEEK, BASED ONLY ON ITEMS CORRECTLY RECALLED IN THE IMMEDIATE TEST

TYPE	ERRORS (Percentage)	CHI-SQUARE
xx	13.9	18.4
xo	28.3	
oo	9.5	31.6
xo	28.3	
xx	13.9	.2
Dox	17.3	
oo	9.5	4.1
Dox	17.3	
xx	13.9	25.9
Uox	33.9	
oo	9.5	21.6
Uox	33.9	

DISCUSSION

There are a number of possible explanations of selective forgetting, but we shall consider only a few of the most plausible as they apply to our data.

1. Selective forgetting would occur if the various types of items were learned to different degrees of mastery. Let us consider three reasons for differences in degree of original learning:

a. *Differential practice.* Since the rate and time of exposure of the memory material were controlled in our work, practice differentials during learning could not arise. Is it possible that the subjects practiced parts of the material before the experiment began? (We have already indicated that our objection to several

other studies rests on an affirmative answer to this question.) The bogus ratings would seem to be wholly new material since they were constructed in what amounts to a random manner. Although the symbols used in the bogus ratings were the same as those used in the self-ratings, their significance was quite different, and filling out the self-rating does not constitute practice on the bogus. The possibility of a special kind of previous learning seems remote in our work. Even on the far-fetched hypothesis that the subjects had previously learned that others would rate them in certain ways and that this learning had occurred in just the way necessary to produce our results, one would expect this differential practice to show itself in immediate recall. Edwards (3) did obtain such a result with immediate testing; we did not.

Results from the non-rated group in the first experiment are also pertinent. If one assumes that the rated group had previous practice on certain of the bogus ratings, there is little reason to doubt that this would also be true of the non-rated group. But the results which are to be attributed to such practice do not appear in the non-rated group. It is not likely, then, that this explanation can account for our findings.

b. *Differential difficulty of various item types.* If items showing agreement between the self- and bogus ratings were less difficult than those where these ratings disagreed, this fact would explain our results. In our lists the only apparent cause of differences in item difficulty is the serial position of the items. This factor could account for our findings only on the condition that items showing agreement between the two ratings should occur at positions which are favorable to rapid learning, namely, at the beginning and end of the list. The bogus ratings were constructed to control serial position. In about half the lists the first two items agreed with the self-rating; in the other half the first two items disagreed with it. The same arrangement was preserved throughout, so that for every item half the bogus ratings were marked one way, half the other. Consequently we may discard serial position of item types as an explanation.

c. *Differential interest in various types of items.* Our subjects did not know that they would be asked to recall the bogus ratings, and it is unlikely that any special attempt was made to memorize them. Observation of rated groups at the time the

bogus ratings were read, however, indicates that interest in the ratings was maintained at a high level throughout the reading. It is difficult to see how differences in interest could have arisen, for the list was read at such a rate that subjects would have had to change from interest to indifference and back again every four or five seconds. Furthermore, if differences in interest are to be assumed, it is probable that the greatest interest would be manifested in items where the bogus disagreed with the self-estimate. Yet these very items are least accurately recalled in delayed tests.

One added control over all the above factors is afforded by treatment of the data from the second experiment. There only those responses which were correct on the immediate test were utilized in demonstrating selective forgetting. Although we may not assume complete equality in the mastery of all these items, we are justified in believing that our method did reduce the probability of large differences due to such factors as interest, special practice, and so on. In spite of this control selective forgetting was found.

2. Another possible explanation is that rehearsal occurred in the period before recall. Although review can be effective in preventing forgetting, to explain our results in this way we must assume that one type of item was reviewed more often than another. Such an explanation is difficult either to defend or to refute, since direct evidence is not available. The subjects were not told they would be tested on the bogus ratings, and they were instructed not to discuss the ratings with other people. These precautions probably limited rehearsal, but some must certainly have occurred. This review may have been confined to one type of item (a doubtful assumption), but it is likely that ratings which surprised the subject were most reviewed, *i.e.*, the type where the two ratings disagreed. Yet, were this true, rehearsal must have been ineffective, for this type of item was least accurately recalled. It is impossible to evaluate adequately the importance of review in the production of our results, but it remains a possible—although perhaps improbable—explanation.

3. Our results may be explained on the basis of reorganization of the material during the interval after learning. This interpretation in one form or another has been relied upon by Wulf (9), Perkins (7), Allport (1), Bartlett (2), and others.

When "reorganizing" is appealed to for an explanation of memorial phenomena, it is, strictly speaking, not the material which is reorganized but some organic process or residue (trace) which is thought to bridge the period between learning and recall and is a necessary condition for recall. According to the gestalt conception (5), these traces exist only as sub-systems in a field, and, as such, they are subject to field stresses as well as to stresses resulting from the dynamics of the trace-structure itself. Now, although it is not possible to observe alterations in the traces directly, the changes in remembered material permit inferences as to conditions in the trace field. We shall examine two possibilities.

First let us consider a situation where the trace is altered, and the recall dependent upon it is likewise altered. There is, according to field theory, no alteration without the action of forces. Do the forces necessary to produce the changes which are reflected in our data arise from the trace-structure itself or are they produced by some other region in the field? We favor the latter alternative. If the material qua material resulted in a trace-system containing internal stresses, then the recall of both the rated and non-rated groups should have shown the same changes. This was not the case, and we must search for forces originating outside the trace-structure. Our search is limited by the fact that not any sub-system will affect the particular set of traces in which we are interested. The orderliness found in all remembering indicates that interaction does not occur among all sub-systems in the trace field but that certain conditions are necessary before communication between trace-structures will take place. The failure of "transfer of training" to appear often bears eloquent witness to this fact. The special conditions required for the production of forces which can result in the alterations we have observed are to be found in only one region of the total trace field, *viz.*, the ego field.

It is not within the province of this discussion to defend the conception of the ego as a sub-system in the total field of excitation; that has been done by Koffka (5, 319-342). We insist, however, that some assumption regarding an ego is needed in interpreting our results. Indeed, the whole point of our instructions was to produce a measurable difference in recall between the rated and non-rated groups, and, as we see it, the difference in instructions for the two groups can be cogently interpreted only in ego terms. For that matter, without such an interpretation how can we under-

stand the generally superior recall of the rated group? Some forces must have been operative in the trace fields of the subjects in one group which were not present in the trace fields of subjects in the other, and, insofar as the conditions of our work allow a choice of conclusion, these forces were derived from an interaction between the ego field and the trace-system of our material in the one case. This interaction, so the theory must go, resulted in the increased similarity of the two structures. This implies that perhaps the ego field also suffered distortion, although it was probably not very extensive. If a method sufficiently sensitive to reveal distortion in this region could be devised, we feel certain that this prediction would be verified.

At this point it may be in order to state that if the above discussion is correct we must not expect every attitude to distort related material. In our opinion, alteration will occur only when the trace-system of the material is in communication with trace-systems of the attitudes. We have no suggestion as to the general requirements for such a communication; our own work shows only one condition under which it can occur.

A second possibility is that we are dealing here with a construction rather than with recall dependent upon altered traces. Put another way, this means that the traces of the material are no longer playing an important part in recall, their function having been assumed by some other trace-structure. What guides the construction?

This has been answered in part by Bartlett (2, 210), who relies on his concept of "schemata." According to him, at the time of recall an attitude toward an organized schema arises, and it is on the basis of this attitude that the construction which is recall is built. In the main we can agree with his emphasis upon attitudinal factors, but we must go further. If we accept a trace theory, we are compelled to accept the position that conative as well as cognitive activities leave traces, for we can see no distinction that can be made between them which will permit only the one kind to be trace-forming. Our interests, ideals, appetites, and attitudes must be grounded in a trace-system of some sort. They are not momentary, appearing only for the duration of a transitory stimulus situation, but are consistent and enduring. And acceptance of traces to explain the consistency and continuity of other behaviors implies

acceptance in these cases also. Yet these are the very traces that go to make up portions of the ego field.

Not all remembering is affected by this special sub-system; sometimes it is surprisingly accurate. Bartlett can have no general explanation as to why this is so, because he will not admit the unity which we insist upon. Our conceptual framework, on the other hand, since it includes an ego field, allows us to point to the ego-relatedness of certain experiences and to suggest that only when such a relation occurs will forgetting show the peculiar effects we have demonstrated. Moreover, although Bartlett can have no hypothesis as to why a certain attitude should have a dominant role in the construction, our theory suggests that the similarity between a particular structure in the ego field and the trace-system of the material must have partially accounted for the substitution of function.

Can one make a decision as to which of the two interpretations just presented better suits our work? This does not seem possible at present due to the fact that the theory of trace substitutions has not been developed. The most plausible speculation is, of course, that a complete substitution rarely occurs; perhaps the traces of the memory material are still active in recall, but other traces are responsible for the major changes in the remembered material. It is likely, moreover, that no partial or complete substitution can take place without communication between the several trace-systems involved. In that case the requisites for substitution would be much the same as for those instances where a trace is altered: factors of proximity, similarity, completeness, and others.

The reader may have wondered why anything possessing so little internal organization as a list of ratings was chosen for our memory material. This choice rules out the possibility of extensive autonomous changes, and allows us to locate the origin of the distorting forces outside the trace-system of the material. Had we chosen material such as a written thumbnail sketch of personality, the observed alterations might have been the joint products of autonomous changes and external stresses.

We recognize that important considerations have been left untouched. One of the foremost of these has to do with the nature of the trace of a "meaning." It would be absurd to believe that the traces which were distorted were those of the visually perceived

plus and zero marks on the ratings. The traces we have spoken of are those corresponding to some such meaning as "this rating applies to me," and it is the nature of such traces that has gone unspecified. Yet any pretension to completeness demands some account of these traces.

Nor have we exhausted the possibilities offered by a trace theory including an ego field. We have spoken of the trace field of the material as if it occurred outside the ego field because we take this to be the most general case. It is, of course, possible that the processes initiated during learning were located within the ego field itself, and consequently the traces of the material would be located there also. But the larger form of our theory would remain unchanged even if this were the case.

SUMMARY

The major finding of this study is that, when bogus ratings are presented as genuine, recalls of these ratings tend to be altered in such a way as to make them more compatible with subjects' opinions of themselves. It is pointed out that this result cannot be attributed to different degrees of mastery of the various parts of the remembered material. An interpretation in terms of reorganization dependent upon stresses arising from the ego field is offered, and its implications are discussed.

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FANTASY IN PERSONALITY AND ITS STUDY BY TEST PROCEDURES

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THE POWER OF FANTASY

IF truth be stranger than fiction the reason must undoubtedly be sought in the fact that truth is often an unavowed expression of fantasy just as fiction avowedly is. That it is stranger than fiction indicates that those who compose fiction set conscious limitations to their productions of which the realm of fantasy itself knows nothing. The strangest aspect of the matter concerns the possibility that an individual may unwittingly translate into reality fantasies which have been rejected by and carefully hidden from consciousness.

These propositions are the tentative result of one of the distinguishing trends of modern psychology. Even William James, as we learn from a recent book of a former student (6, 77), was capable of beginning a lecture one morning with the question: "Why is it that a perfectly respectable man may dream that he has intercourse with his grandmother?" Such questions were, however, not characteristic of Jamesian psychology. They are, needless to say, more natural in that Freudian psychoanalysis the "complexes" of which he was somewhat skeptical. One conjectures that in the rest of James's lecture which began with the quoted question he referred to what was in his time even more than in our own the first indications of this new approach to the psychology of the unconscious. For only with the advent of psychoanalysis has the importance of fantasy been duly stressed and made the subject of careful investigation by psychologists.

After Freud, Adler's voice, even while dissenting, carried on the tradition that fantasy wields great power—he formulated the concept of "guiding fictions"; and Jung, though again diverging from Freud in other matters, even deepened this emphasis by pointing to the possibility of collective fantasies—the so-called archetypes—inherited through successive generations.

Despite these protagonists it may at first glance seem frivolous to delve into the realm of fantasy when faced with the grave

problems of mental disorder. Not that the psychiatrist has failed to recognize delusions and hallucinations as fantastic in nature—fantasy at this diagnostic level has always been appreciated. But about the dynamics of fantasy and its possible role as an etiological factor skepticism is still fairly general. The reason is not far to seek. The disciplined modes of scientific thought are naturally antagonistic to such vague and irrational stuff. Trained as we are to exercise restraint in our own thinking—sometimes even to the point of naïve materialism—it is but a short step for us to turn a deaf ear to the patient's aberrations. To do this is, however, to prove more faithful to our formal training than to our duties as objective investigators of whatever presents itself.

A good part of the impediment to a recognition of the power of fantasy may be supposed to have resulted from the startling novelty of the conception and the almost revolutionary demands which it makes upon the sober investigator. Freud has more than once put on record his own bewilderment at finding some completely infantile imaginative construction at the basis of a patient's symptoms. Thus he has written in one place:

A . . . peculiarity of the analysis has only increased my difficulty in deciding to make a report upon it. . . Many details . . . seemed to me myself to be so extraordinary and incredible that I felt some hesitation in asking other people to believe in them. I requested the patient to make the strictest criticism of his recollections, but he found nothing improbable in his statements and adhered closely to them. Readers may at all events rest assured that I myself am only reporting what I came upon as an independent experience, uninfluenced by my expectation. So that there was nothing left for me but to remember the wise saying that there are more things in heaven and earth than are dreamed of in our philosophy. Any one who could succeed in eliminating his pre-existing convictions even more thoroughly could no doubt discover even more such things (5, 478-479).

The existence of such statements is seldom appreciated by critics who upbraid Freud for introducing nonsense into the domain of science and who, instead of reading carefully such reports of clinical material as do exist or open-mindedly examining the similar data of their own patients, have been satisfied with the easier solution of characterizing the whole of psychoanalysis as fantastic.

That the characterization applies cannot be denied. The *data* of psychoanalysis are usually fantastic. But this truth has hardly registered in the critic's mind before he escapes its full appreciation by extending the characterization to the *concepts* and *methods* of

psychoanalysis—which, for all their shortcomings, are only occasionally that bad. In other words, the critics of analysis have sometimes made the mistake of blaming the analyst instead of the analysand, and of taking the former less seriously instead of taking the latter more so. In the end we shall undoubtedly have to acknowledge our debt to them both—to the analysand for providing the data and to the analyst for taking his patients more seriously than has ever before been their lot in the history of psychopathology. The upshot will be that instead of calling Freud's views fantastic we shall begin to study the nature and habits of fantasy itself.

THE NATURE OF FANTASY

As already implied, the first and foremost feature of fantasy is its infantility. Fantasy is a characteristic mode of the child's adjustment—his way of getting immediate satisfaction despite adverse circumstances in the environment. It is, of course, not always gratification which fantasy provides; anxieties are also thus envisaged. In the latter case one may suppose that some defensive function is served when the organism anticipates a danger which might otherwise overwhelm it unexpectedly. But gratifying or defensive in function, the fantasies of infancy are in either event a mode of adjustment to frustration. Whether, having once occurred, they may in some fashion get fixed in the personality so as to interfere by repetition compulsion with later adjustment is the crucial problem for psychodynamic research.

A corollary of the infantile nature of fantasy is the great seriousness with which the child treats it. The play in which he expresses it is quite as important to him as are the working duties of an adult. Since, however, it is the adult who is responsible for the child's upbringing, one of the chief functions of education consists, as already suggested, in inhibiting the fantastic mode of adjustment and inculcating instead a healthy respect for reality as defined in social terms. This transition is one of the most difficult in the individual's existence—so difficult that nearly every mythology and religion has taken it into account, as witness, for example, the story in the Book of Genesis of man's expulsion from Eden into the world of adult labor. Moreover, this inhibitory process is hardly ever completely successful. There are moments when even the

most normal individual relaxes to indulge a reverie and practically all of us can remember the nocturnal fantasies which we call dreams. Occasionally, too, the failure of such inhibition is manifested in overt behavior of an erratic or bizarre kind.

The ground is thus prepared for recognizing a second main feature of fantasy—its possibly unconscious character. While in early childhood fantasy plays a more or less accepted consciously dominant role, education gradually inhibits it. In adulthood, disciplined as it is to social adaptation, fantasy can eke out only a marginal existence. The fantasies of the adult are hence usually repressed and are sometimes traceable to infantile experiences which have never been completely surmounted or mastered, *i.e.*, they are “unconscious.”

A third characteristic of fantasy, concerned now less with its function in behavior than with its qualitative nature, lies in its irrationality and illogicality. The same thing which now means black may at the next moment or even simultaneously mean white as well. One is reminded of Humpty Dumpty in Alice’s looking-glass world:

“When I use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean—neither more nor less.”

“The question is,” said Alice, “whether you *can* make words mean so many different things.”

“The question is,” said Humpty Dumpty, “which is to be master—that’s all” (3, 214).

Needless to say such a cavalier attitude in the land of fantasy holds out little hope for a purely logical appreciation of its language.

A fourth characteristic of fantasy is its affinity for *concrete pictures*. This feature is, of course, cousin to the illogical and irrational nature of it. The language of fantasy practically never employs abstract terms; in it everything, including even complex relationships, finds expression in some concrete form.

Fortunately, however, it is just this feature of fantasy which at last rescues us from what might otherwise be a hopeless attempt to decipher the vague and codeless thing it must by this time surely appear. That is to say, it is the very concreteness of fantasy which indicates its determined character. The language may be primitive, but the things expressed in it and even the very way in which they are expressed at any particular time can with striking regularity be traced to some direct previous experience of the individual. Let

the individual who has reported the fantasy relax and follow the psychoanalyst's instruction to associate freely, *i.e.*, without criticism or censorship, and it is usually possible to trace the evoked pictures to their origin and to recognize how they have been determined. For paradoxical as it may appear, it is *free* association which reveals the *determinism* of fantasy, the fact being that one of the chief functions of disciplined thinking is to defeat the determinism of that impulsive life which is characteristic of the child but taboo in mature adulthood.

This method of investigating fantasy by free association is, now that the genius of Freud has put it into our hands, appreciated as a very natural one. It involves the use of a tool which by its very lack of restriction is adapted to the kind of data to be studied. If fantasy is in its very nature opposed to the disciplined forms of logical thinking, it is, of course, necessary for a subject whose fantasies we wish to understand to adopt a mental set which is equally free and untrammelled. Since, moreover, we may expect from the postulate of psychic determinism that everything in human behavior has been produced by a definite condition of previous experience, such free association should lead to the source of the fantasies studied.

In summary, then, these characteristics of fantasy—its infantile origin, its inhibition by education and its subsequent unconsciousness, its disregard of logic and reason, its concrete pictorial quality and its determinism—must be kept clearly in mind if any method for studying it is to be pursued with success.

THE LANGUAGE OF FANTASY

If, having recognized the importance of fantasy and having surveyed its chief characteristics, we next examine the possible ways of studying it, the first method to be considered is, as already anticipated, psychoanalysis itself. The psychoanalytic procedure generally means two things: the technique of free association and its especial application to the dreams of the analysand. From the historical fact that Freud's first independent psychoanalytic work was on the interpretation of dreams may be gleaned the insight that his approach was from the outset a method for studying fantasy. That free association was for the first time elaborated in relation to dream interpretation and was thus initially expounded in the book on dreams further corroborates this view.

There can be little doubt that the highly personal and continuous approach to fantasy in which psychoanalysis consists is still ideally the method of choice. It is also unfortunately clear that it is far too expensive of time and labor for general utilization. There have accordingly sprung up more recently certain alternative methods which are much shorter and which, though necessarily less complete and perhaps in some respects less reliable, are proving themselves well adapted to certain psychological ends that emphasize measurement and diagnosis rather than therapy. These new devices also have the merit of providing a kind of objective experimental validation of psychoanalytic concepts.

The techniques in question have collectively come to be called "projective," since they all depend upon the subject's objectification of his subjective processes. Each of them encourages the individual in the presence of an unorganized neutral stimulus medium—whether visual, auditory, plastic, etc.—to let himself go and render it meaningful. He may, for example, be shown an ink-blot and asked to tell what objects it resembles or he may be given some modeling clay and requested to fashion it into something or other.

An interesting problem is involved in the comparison of such a general approach with the psychoanalytic method of dream interpretation. While it is not difficult to appreciate how dreams as material for analysis are equivalent to fantasies elicited by the projective devices, from this point on the comparison is more hazardous. Most knotty of all aspects of the problem is that concerning the role of free association, for, while in dream interpretation free association occurs after the dream is reported, in the projective methods it enters—and then only in a very modified way—in the actual process of creating the fantasies. One might at first glance suppose that the distinction is not vital since dreaming is itself a kind of free association but this solution turns out to be imperfect. Fortunately, however, these finer theoretical difficulties are of little moment here. It suffices to note certain essential resemblances between dream interpretation and the projective procedures as follows: The reported dreams are equivalent to the projective products or fantasies; the same inner tensions that lie behind the dreams are presumably back of the fantasies, too; the immediately present stimuli of the dream (*e.g.*, the buzzing of a fly near the bed) correspond to the neutral stimuli of the test procedures, and memory fragments have an equal opportunity for

expression in both; free association is encouraged in post-dream interpretation—even if not strictly involved in the process of dreaming itself—and *freedom* of association is urged upon the subject in the test procedures for eliciting fantasies.

It is thus expected that the projective techniques will give the personality an opportunity to cast up its own—whether as regards the content of specific fantasies or as regards particular modes of functioning. Some of the tests, as will appear subsequently in more detail, favor the contentual aspects of fantasy; others elicit more readily the formal aspects of mentation; but all of them include a measure of each complement.

The brief survey of actual procedures for which there is time may conveniently follow, though only approximately, the chronological order of their development. Preference in selection will be given to those methods which have in general been broadly adopted as clinical aids and have in particular been successfully and consistently used at the Worcester State Hospital.

1. *Word Association Test.* This first method is the oldest and the most widely known. Adapting a technique which had been introduced into experimental psychology by Galton and elaborated by Wundt, Kraepelin, and others, Jung (11) around 1900 attempted to corroborate and extend psychoanalytic theory by means of the word association test. That this is a projective device has been convincingly shown by Wells (27) in an instructive paper in which the Rorschach test has been compared with word association. Since the words with which the subject is stimulated may produce any of an unlimited number of possible responses, it is easy to appreciate that one is here dealing with a technique in which the subject perceives the word in his own way. Where complexes dependent upon repressed fantasies are involved, unusual associations as indicated by the nature of the response word, delays in the reaction time and other cues are available for observation. The method has had extensive application both in clinical practice and in research, as, for example, in the Kent-Rosanoff norms and in connection with the Luria technique (14; 10).

2. *Rorschach Test.* More obviously concerned with fantasy and its elicitation is the method which Hermann Rorschach developed from 1911 on and introduced in his 1921 monograph *Psychodiagnostik* (21). This technique has since been elaborated by Beck (2),

Klopfer (13), Hertz (8), Rickers-Ovsiankina (20), and others. In it ink-blot, colored or gray, are presented to the subject with the instruction that he is to report what he sees—in much the same way that he might do if he were looking at drifting clouds or gazing into an open fire.

One rather significant difference between the word-association procedure and this one lies in the latter's greater emphasis upon formal categories of interpretation rather than contentual ones. It is true that the Rorschach tester notes any special content which appears insistently or in some unusual context but greater reliance is placed in the scoring on, say, the number of colored parts which are reacted to, the number of movement responses given and the precision with which the forms reported are perceived. In the word-association technique, on the other hand, the accepted meaning of the stimulus word plays a more determinative role in the interpretations, such as when a delayed response to a word which is easily taken in a sexual significance appears in the record.

3. *Play Technique.* The method of play technique, though conceived by Vernon (26) to represent a prototype to which the Rorschach test is assimilable, resembles the word-association procedure even more closely in that it emphasizes content more than form. There is also a new feature to note here for in play technique we come for the first time in this survey upon a procedure which very directly aims at revealing complete fantasies with plot structures. The method probably had its origin in Freud's "Analysis of a Phobia in a Five-Year-Old Boy," published in 1909 (5, 194-195), where he wrote: "For some time Hans has been playing horse in the room: he trots about, falls down, kicks about with his feet, and neighs. Once he tied a small bag on like a nose bag. He has repeatedly run up to me and bitten me." Freud interprets these observations, reported by the child's father, as follows: "Thus he was the horse, he bit his father, and in this way he was identifying himself with his father."

Hug-Hellmuth (9) later elaborated this casual use of play spontaneously manifested by the child into a more deliberate attempt to elicit such behavior, and Melanie Klein (12) has within recent years taken the final step by systematically and consistently applying play technique with toys as a substitute for free association with words in work with children. As can be readily appreciated, this procedure is particularly suitable for the study of very young sub-

jects—with whom it had its origin—but it has also been significantly applied to adults, among them schizophrenic patients (22).

4. *Thematic Apperception Test*. In 1935 Morgan and Murray (18) of the Harvard Psychological Clinic introduced a method which resembles play technique in being designed to elicit full-fledged fantasies but which is more readily applicable to adult subjects. Here the aforementioned clue from literary fiction—that truth is stranger than fiction but derives from the same psychological source—has been taken quite seriously for the stimulus material is a set of pictures which are individually presented to the subject with the instruction that he is to regard them as illustrations in a story book. He is requested to build up plots around the pictures, identifying the people represented, explaining what they are doing, how they got there, and what the outcome will be. From the stories thus elicited Murray, Morgan, and their co-workers have found it possible to reveal highly significant facts about a subject's personality (19). Masserman and Balken (15; 16; 17; 1) in Chicago, Rotter (23) and Harrison (7) at the Worcester State Hospital, and others who have subsequently attempted to validate the procedure with groups of neurotic and psychotic individuals—the original subjects at the Harvard Clinic were normal—have reported promising results.

5. *Tautophone*. A final technique which may be mentioned employs an instrument designed in 1936 by B. F. Skinner (25) and named by him the "verbal summator." The instrument is a phonograph which repeats recorded patterns of vowels until the subject who is reclining at some distance from the machine and has been instructed to report what the man on the record is saying gives a response. Thus, a subject given the stimulus pattern ŭ ŭ ē ŭ replied "a hoodoo," while to the vowel pattern ŭ ah ŭ ī he responded "about a pint." To ī ŭ ŭ ŭ another said, "I was born on a square piece of land," and to ŭ ī ŭ ŭ still another responded, "Goodbye, Hoover!" Shakow and I (24) have adapted this device as an auditory apperceptive test and have re-christened the instrument "tautophone" to avoid the theoretical implications of Skinner's term. Thinking of the role of audition in delusions of reference and the high frequency of auditory hallucinations as compared to those of other sensory modalities, it was our notion that this test might supplement such visual ones as the Rorschach or the Thematic Apperception significantly. As developed thus far it

resembles the former of these more than the latter because of its relatively greater emphasis upon formal than upon contentual scoring categories. A scoring system which takes into account the complexity of the structure of the response—syllables, words, etc.—the similarity of the response to the stimulus sample, personal reference in the response, as well as certain relational indices has been developed on the basis of material from a group of normal and another of schizophrenic subjects. It appears at present that the method may, after more experimentation, provide a further useful technique of a projective sort.

In view of the fact that these tests are all attempts to study fantasy either with reference to form or content the question may well arise as to whether more than one of them is necessary. The answer which practice gives is that because they favor form or content to a different degree and, moreover, appeal to subjects in diverse ways from the standpoint of the stimulus material, they usually complement each other significantly. While it is obviously not worth while to use all of those procedures with every individual, it has been found that, for example, the combination of the Rorschach test, emphasizing formal features of interpretation, with the Thematic Apperception, which stresses meaningful content, is unusually fruitful in results.

It is noteworthy that such projective methods for studying personality as have just been reviewed are in the spirit of some of the most recent tendencies of modern scientific work, as L. K. Frank (4) has shown. He has particularly called attention to such parallels as are found in spectrographic analysis (to reveal the chemical components of compounds) and in biological assays, in both of which an organized unit can be studied as to its composition without being destructively broken down. Frank notes that such techniques, whether in chemistry, biology, or psychology, have the great advantage of respecting the organization of the individual and of revealing it without annulling it. Thus in the projective psychological procedures the personality of the subject is evaluated by observing the way in which he organizes a field in which he has been encouraged to react as freely as possible. For if the individual responds, not to some predetermined meaning imposed upon the stimulus by the experimenter, but in terms of his own subjective experience, it is possible from noting with sufficient skill the ways

in which he configures, organizes, or distorts the material to trace the content of the fantasies and the formal functions which have participated to produce the result.

Another advantage of the projective devices is their relatively high proof against the subject's ability to conceal or deliberately modify the facts about himself. In other words, these test procedures are *behavioral* in nature—they instruct the subject to do something instead of asking him his opinion about what he might do under given circumstances. The pitfalls of such devices as the personality inventory—from which one learns little else besides a person's misconceptions about himself—are thus obviated. Since the subject is, moreover, usually unaware of the purpose of a projective test, he is again less able to dissimulate.

It is nonetheless necessary to admit that these projective techniques also have their pitfalls. Considerable skill is involved in the interpretation of the data obtained and this represents a serious limitation. In uncritical hands the invocation of fantasy to explain behavior can become so far-fetched as to be itself fantastic. The only safeguard against such a misapplication of the procedures is a sound background in scientific parsimony and a thorough acquaintance with specific alternative factors underlying behavior—physiological, neurological, and psychological. Besides this quantitative danger there is, moreover, a qualitative one. It is easily possible in making interpretations of projective material to project one's own fantasies in the process. The psychoanalyst would undoubtedly maintain that for most persons who are to use these procedures, just as for prospective psychoanalysts, a preliminary period of self-analysis is necessary in order to prevent reciprocal projection; and, since it appears that the outstandingly distinctive result of a didactic analysis is a real appreciation of the power of fantasy, this suggestion is not unreasonable. These drawbacks to an able use of the techniques may not in a collaborative set-up like a mental hospital be as formidable in practice as they sound in generalization but they must be squarely recognized for what they can be at the worst if abuse is to be avoided.

Conclusion. The present discussion of procedures for studying personality by educed fantasies has been necessarily selective. Other devices as, for example, cloud pictures, finger painting, and modeling clay might have been described in addition to those given—Word Association, Rorschach Ink-blot, Play Technique, Thematic

Apperception, and the Tautophone. But these omissions are of minor importance provided that the general significance of fantasy in psychodynamics has been made clear and some impression as to its nature and its availability for study by projective techniques has been conveyed.

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OF PSYCHOLOGICAL WRITING: BEING SOME VALEDICTORY REMARKS ON STYLE *

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THIS JOURNAL, which in the last four years has suffered much at my hands, now endures one final indignity—an article. Such is the price it pays for bygone services and the hope of future calm. It is perhaps absurd to expect that same blue pencil which formerly traced only the blunt design of deletions and corrections now to flow with grace and erudition. Yet if in these past months I have stored up certain gems of experience, not only about writing in general, but especially about the way psychologists write—and could write and should write—then I have gained something which psychologists might be interested in sharing. It is that which constitutes my article.

I shall, I fear, run the gamut in exhortation and advice, from the grandiose to the minute. To start off my venture, I propose to discourse upon such large and sweeping issues as the nature of scientific writing in general—a topic replete with fascination for the editorial slavey, who beguiles dreary hours with dreams of just such an eventual fling in these generously wide and unbounded realms. Thence I shall proceed in more sedate and fitting mien to the practical details with which blue pencils are traditionally assigned to cope. By the time I have worked down from a philosophy of style to the use of the semicolon, I shall, let us hope, have restored in myself an appreciation for a more ladylike self-effacement. And so, to the dicta.

SETTING THE TONE: VARIOUS ADMONITIONS AND REPROOFS

The editing of many articles has confirmed in me a suspicion, long harbored somewhat incoherently, that scientific writing need not be—though it often is—dull. This I believe in spite of much evidence to the contrary. Sometimes in my more desperate moments, indeed, I have even succumbed to a conviction that

* In her capacity as Editorial Assistant to this JOURNAL between 1937 and 1941, the author of this article has read and re-read with careful and critical attention every word published in its pages. The results of her experience here set forth will profit everyone interested in improving the standards of psychological writing.—EDITOR.

authors are engaged wilfully and with malice in suppressing every vestige of spontaneity and emphasis in what they are writing; and this in order to prove, absolutely prove, their devotion to science. With the devotion itself I can have no quarrel; that I hope will be obvious. But is it reasonable to advertise one's devotion to so compelling a mistress by concealing all her charms, killing her excitement, and driving away her friends?

The knowledge that he is "reporting an experiment" freezes the pen of many an author; thereafter, in a mistaken attempt to achieve the workmanlike and to avoid frivolity, he succeeds in becoming merely dull. Yet that same man, describing his experiment orally to a colleague, finds no trouble in conveying his enthusiasm; his excitement carries over, his satisfaction at certain results, his bewilderment over others, his hypotheses, his ingenuity with his apparatus. He punctuates his exposition and points it up as he goes—with his inflections, his gestures, the compelling force of his own absorption. But, sitting down to write, knowing that now of all these modes of expression he has narrowed himself to a single one, mere words, what does he do? Instead of choosing those words as would a strategist, seeking how best to achieve his aim, he bends all his efforts to the paradoxical search for the most colorless expressions, the least pointed, and the most roundabout.

Perhaps the author needs to ask himself why he is writing at all. There are, of course, many reasons. Among the minor benefits is the clarification of the material which results in the author's own mind; but if that were all, he could keep his notes in his own desk drawer and spare himself the trials of publication. If he publishes, he must wish to communicate. That is the inference his readers have a right to draw from seeing his words in print; but it is an inference which, alas, would prove unreasonable on every other score. Every stumbling block on which he can lay his hands he puts in the path of his readers, and he thinks, what is worse, that he is serving the cause of science. But it is neither good science nor good common sense to put one's reader to sleep and then expect him to grasp the highlights of an experiment, the significance of which one has assiduously buried.

My plea is not for the lurid and "popular." All that I have said is consonant with the dignity which rightfully surrounds publication in scientific journals. Yet dignity is not synonymous with dullness. The most routine experiment in psychophysics, laden

with reaction times and significance of differences, may be made to look pointed or dismal—whichever the author will. Though perhaps never so absorbing to the ordinary reader as a mystery thriller, it may nonetheless have its own relative climaxes and its punch. It is a matter of clarity and emphasis and a realization of what the results actually mean.

It is also a matter of the author's own interest in his material and his attitude toward his writing. If he himself is intrigued by it, his battle is even then half won though he be but a tyro at the art of composition. But if, on the contrary, he is already jaded, if to him writing is not an amusing occupation, if he is not piqued somehow with the idea of communicating what he has found out, then—were this world a Utopia in which academic salaries could cope with such luxuries—he ought to hire a ghost to do the job for him. At the least, I suppose (coming back to the practicable), he ought to set himself to the learning of workmanlike techniques so that he could have done with his disagreeable task with the utmost dispatch. But, I repeat, the matter of interest is fundamental. It goes deeper than mere techniques. If what a man has to say is a bore to him, so will it be a bore to his hearers.

With writing such as that appearing in psychological journals, it seems to me, the problem has a slightly different twist. These authors *are* interested; their absorption, sometimes in spite of themselves, breaks through the shackles of their roundabout and nondescript prose. I say it breaks through, for they are ashamed of their enthusiasm. To be enthusiastic may be to rush into unfounded conclusions—as indeed it may. Only *now* their experiment is done, their checks completed, their results surveyed. Can it benefit them at this stage to stifle the contagious interest which led them to work on the experiment in the first place, to regard with shame their most potent ally of communication?

If they would but let it, their enthusiasm would work for them as they write; it would even rescue them from some of the pitfalls that await unwary authors. By admitting their absorption in the problem at hand, they would find it easier to keep their eyes on their data and not on themselves. Self-consciousness can tie a writer into knots appalling to view—and impossible to unravel. But a man convinced of the importance and the timeliness and the ultimate sense of the material with which he is dealing is a man who is already looking outward, away from himself. He will be

the less tempted to resort to the tortured circumlocutions of the passive voice, to the troops of qualifying clauses that stumble so interminably around Robinson's barn. He is, instead, simply reporting his data. His task becomes henceforward the direct one of setting forth as accurately as possible the manner whereby he achieved them and why he finds them worth passing on. Essentially writing is as simple as that.

A corollary to this matter of straightforward report by an author who dares acknowledge his human enthusiasms is a sense of the reader. To whom is our writer speaking—a colleague, a superior, a handful of experts in a circumscribed field, the reader of *The Daily Mirror*, or William James's ghost? One thing at least is certain; he is not addressing all mankind. Yet sometimes authors forget so simple a fact, and, confused, they grow self-conscious again, even to the extent of putting back the stuffing in their scholarly shirts when all the while they know they are more comfortable without it.

Among professional writers it is a commonplace that one aims one's product straight between the eyes of a particular audience; to such authors it is a case of aim accurately or starve. A story for the *Atlantic Monthly* is not, we are told, written in the manner of a story destined for *True Romance*. Psychologists, writing for their professional journals, are not so far removed from this world of journalism as to be unable to take a tip therefrom. Among their own journals too there are differentiae. Some want short reports, others full technical discussion, still others current implications, and so on. The smart writer, deciding beforehand which his material suits, develops it accordingly. Thus he saves himself and his editor revisions and delays which were avoidable with forethought.

But in addition to choosing the medium of publication, it is my private conviction that a man writes better if he addresses himself to a specific, individual reader. Many factors enter into my conviction on this point. Look, for instance, at how well a man does when he is explaining his material orally to an audience of one; and look at how he fumbles when he sits down with pen and paper to explain that same material to everybody in America, Europe, and Asia, whether living, dead, or yet unborn. If, on the other hand, he would choose some one person, whether imaginary or real, and then, focussing on his data and that individual, proceed to write, the problem would be simplified and the product more readable.

A distant, unspecified audience is vague, lost in the haze; the mists spread, drifting slyly, and envelop the writing as well. But an audience of one, sitting ghostlike across the desk, is definite and compelling. From him, as from a New England conscience, there is no escape.

On this score too I have still another private conviction. (Give a creature a blue pencil, and she breaks out in convictions as with a rash.) Although there are, perhaps, occasional papers which, demanding a highly specialized audience, must be pitched at a highly technical level, nevertheless psychology as a whole would be the gainer if the bulk of psychological writing were aimed at a hypothetical "intelligent reader" possessed of only a general background in psychology. Material which fails to make sense to an alert and intelligent general reader is material which can be suspected, at least, of poor writing and slipshod presentation. By such a procedure as the one here proposed the writer himself stands to gain. For observe that, if he takes for granted his reader's technical knowledge and God-given ability to follow every ill-jointed turn in the argument, to leap each hiatus between premises, and to arrive with him at the conclusion by something like an ah-ha experience—if he expects all this of his reader, where is the guarantee that the argument exists in any clearer form inside his own head? It may be that in the very process of setting down for his reader the obvious, he will come upon a forgotten point that is not so obvious; or, if not, the validity of his material will stand the firmer for its one additional and final check.

I will even carry my confession so far as to admit that as I read over articles in my work for this JOURNAL, I thought of myself as some such measuring rod. It seemed to me that unless the author were discussing mathematical formulae (and over mathematics I give up the battle with a cowardly alacrity), I ought to be able at least to follow his argument. The subtle implications or the underlying psychological theories I might not be able to follow, but the English ought to make sense—a shallow sense for me whose knowledge of psychology is weak, a deeper sense for a reader better equipped, but always sense. This still seems to me a not unreasonable demand. But it was not invariably met.

In short, expression—if I may quote someone who has earned the right to speak about expression—should, in the words of Galsworthy, "be humane, and refrain from torturing the wits of

mankind." To the furtherance of such humanity there are many aids; in the next section we shall turn to one such—planning an article. For an author will have less trouble in being humane to his reader if he himself, before he sets forefinger to typewriter, knows what he is to say.

But first, parenthetically, I have one more general question. Why is everyone afraid of humor? Is it unscientific to laugh? A professional journal is not a joke book, granted; but if one's apparatus were to go berserk during an experiment and release a fire alarm instead of turning a memory drum, would it be illegal in the subsequent report to acknowledge the scene with one wry comment? It seems somehow ungrateful, when life presents us with so much that is merely routine, to stare down the brighter moments with an impartial and unblinking hauteur. "Series D, consisting of Trials 62-89, is not included here, due to faulty apparatus," we have been taught to report—but how dull! A touch of humor, one dry understatement, a dash of good-tempered irony, these add to the effect of writing as does seasoning to cookery. And, if I must resort to the pragmatic, they add also to the chances of one's words being remembered, the serious along with the sprightly. I have no experiment to prove my contention, and yet I feel sure that whatever device serves to increase attention and alertness in a reader serves likewise to quicken his memory; and humor does heighten attention. I myself, to take one small example, look back with pleasure upon a posthumous article of Professor Stern's, published in this JOURNAL a couple of years ago. Because it was a speech, it had at the conclusion a short and whimsical *envoi* to the audience. I remember the article for many reasons, but one is the pleasant and unexpected touch of that postscript.

GENERAL STRATEGY: PLANNING THE ARTICLE AS A WHOLE

The most effective article is that which has been planned for organization and effect; especially is this true of articles whose main purpose is exposition. Such a statement is a truism, but the truth of even truisms needs reaffirming from time to time. It is the rare author who can simply plunge into the business of writing and emerge with a script in which every sentence is a foundation stone for the ones which follow, every new idea an outgrowth of preceding ideas, every conclusion prepared for in advance. Such an

article is no whim of a summer's day. It is the product of rigorous thinking and careful planning, and not to be entered upon lightly.

There are, it is obvious, different sorts of plans, probably as many sorts as there are authors employing them. A perfectly adequate plan may never exist in writing at all, may simply take form in the mind of the man who is to use it; and it will still be a good plan, if he has the kind of head which is hospitable to extemporaneous schemes. But woe to him who only pretends to such an anatomy. The spirit of "just as good," of makeshift—"It will work out as well in the end"—is here fatal; it is but the wheedling voice of laziness, to which no scientist will give heed. An intelligent plan is the only way to play ball with the patient and intelligent ghost sitting across the table.

In the making of plans an expositor is more fortunately placed than is a narrator. How, for instance, does one begin a novel—with an elaborate stage set, with a scene in a railroad station, with events of twenty years ago, with a tea party, with a murder? The choice is dizzying. But the scientist is not asked to be startling or subtle or dramatic; he is expected merely to present clearly and with best effect the material which he has at hand. If the obvious order is the best order, no one will murmur—background, experiment, results, conclusions. Yet it is time well spent to eye one's material sharply and make sure; look at the data and then at one's friendly ghost. What do the data demand? Have you here a set of results which can best be presented in a way that seems backward? Then present them backwards, only be sure to know why. It may be that the ghostly reader needs to hear the *experiment* described before he can understand its background, or even its apparatus. Let the decision be dictated by the material itself, and take nothing for granted. There is no more reason why all articles should follow one preconceived pattern than that all results should bolster one hypothesis. They may or not.

As to the actual mechanics of the plan—of what it shall consist and how detailed to make it—these seem to me to depend upon the working habits and temperament of the writer. The idea of dividing the printed article into sections, each labeled by a centered heading, is in professional writing both traditional and reasonable. Whereas in belletristic essay-writing one must have a plan and yet be careful to conceal it—never leaving the girders and scantlings indecently exposed—in straight expository writing concealment is

no virtue. Here, where one is not merely beguiling a reader but teaching him, surprise becomes actually a detriment. At every minute the reader must know where he is, and, so far as is possible, where he is going. His journey will be the pleasanter if he is not only told, but given some such stable signpost as a centered heading to glance back upon in case he becomes confused or, shockingly enough, dozes by the wayside.

Beyond such broad and simple divisions, my plea is that the writer watch himself. A tendency to subdivisions of subdivisions should be cured if possible and in any case thwarted. Though occasionally the reader may find italicized paragraph headings highly useful, a jumble of subdivisions very soon defeats its own purpose of clarity, ending in a disjointed complication and chaos. If the section is written clearly, its subdivisions and their interrelations will be apparent from the unfolding argument. And this strikes me as a more mature and adult procedure, to place a fact in its relation to other facts, than to stalk along merely pointing and enumerating. But these are general remarks, absurd unless interpreted in the light of the particular situation. Some material demands subdivision; some is ruined by it. The point is to begin with a fresh eye and no preconceptions, letting the material determine the organization—the material and, perpetually, the reader. Will the reader be confused *without* subheadings? Will he be annoyed and his intelligence insulted *with* subheadings? These are the questions to be posed.

One minor detail. If subdivisions or lists of attributes do become necessary, they make better sense when presented in parallel construction. Having begun a series with a noun, for example, keep the rest as nouns or noun clauses. In a series headed "Characteristics of patients" one is, in nine articles out of ten, likely to find some such sequence as: friendliness, angry, fails to cooperate, morose, timidity, mumbling to himself, difficult to attract attention, schizoid. Frequently the confusion in phrasing reflects a confusion in thought; a careful diagnosis might reveal these characteristics to be as little parallel in meaning as they are in phraseology. But sometimes too an author leaves such scraggly edges simply because he does not recognize them for the unworkmanlike and slipshod tricks that they are.

To return again to the plan, however, it is not enough to know merely the sequence of ideas. One must know emphases as well.

Writers sometimes forget that such matters of fundamental stress should be managed as expertly and as painstakingly as are the descriptions or sketches of their apparatus. Yet the fact is that there are many decisions which must be made before a single word can be written. What, above all, is the real contribution of the material to be reported? If it has advanced a controversial problem one step nearer solution, one probably needs a rather careful statement of the problem and its current status, then the exposition of the new data—an exposition oriented toward the problem to which it is relevant—and finally a clear summary of where all this leaves the problem and how it may next be attacked to best advantage. Simple and obvious enough, you will say, and why waste print on cautions so manifest? But every editor knows the number of manuscripts he receives where the experiment described seems set up in a vacuum, unrelated to anything else in psychology or in the world. When, by editorial admonitions, the author is persuaded to revise his manuscript to include some mention of its significance, he does so, often enough, by tacking on a couple of disjointed sentences to the final paragraph of his conclusions, distressingly unaware of the fact that his whole article should have been headed in some definite direction before ever it took form. The emphases are part and parcel of the plan and the outline.

When one is laying one's plans, too, is the time for deciding on the prevailing tone of the article, whether it is to be discursive and explanatory or lean and reportorial. To wander uncertainly back and forth between the two is to miss the virtues of both media. This is not to deny that there may be papers which require the first treatment in one section, and the second in another; the experiment may be reported bluntly, the discussion be full and philosophical. But the change should result not from whim or inertia but from necessity. An author who ambles pointlessly from one style to the other will find his intelligent reader—if ever he gets one—confused and wearing a frown. In this connection, of course, our author needs to check on his purpose in writing and on the type of journal for which he sees his material headed. Granted a mere page and a half in which to describe a piece of apparatus, for instance, he would be foolish to play with fancy phrases—however vividly they may reflect his enthusiasm or however fervently they may have been besought by excitable editrixes. Yet, with twenty pages at his disposal, he would be equally at fault to write up his material in

niggardly outline, avoiding every mention of the larger issues to which he sees it related.

To put it all in a few words, these then are the processes which must have been met and mastered before the scientist begins to write. His data, it is quite plain, must have been collected, the findings sifted out. The significance of the results, whether negative or positive, must be clear in his own mind. About the type of publication suitable for such material and such results he must have more than a vague presentiment; rather, an explicit policy. To organize the material for such presentation, his plan must embrace emphasis and orientation as well as the sequence of ideas dictated by the usual outline. Finally, seeing his material in this light, he must determine its meaningful subdivisions and label them as will be most helpful to the reader.

And then, with all the hard work behind him, he sits down to write. As he pounds out his words and his sentences, he seals the fate of his work as communication; on them depends the degree of communication he achieves—the consummation of the processes which have gone before. In the next section we cast an editorial eye upon this matter of the ordering of words, which in its narrower sense is commonly called “style.”

PARAGRAPHS, SENTENCES, WORDS

The first paragraph scanned by the reader is, customarily, the first paragraph at the beginning of the article. This fact, so obvious in the saying, seems nevertheless to be news to many an author. A man going to look for a job, or a scientist visiting a strange laboratory, or an emissary seeking the cooperation of a neighboring power, or even a man bent on pleasant and instructive conversation (and psychological writing, to be candid, frequently shares in the characteristics of all four), such a man spruces himself up a bit—perhaps sartorially, anyway mentally. Alert for what may come, he puts his best foot forward. He does not, at the least, stumble into the room on dragging feet, his glazed eyes staring nowhere; nor does he ignore his host, in order to mutter persistently to himself a welter of references and page numbers. But authors do; ah me, authors do.

In the first paragraph of their articles they have a chance to introduce themselves and to make that vital first impression—vital

not only to themselves as persons but to the material they have in their hands to present. And what do they do? Instead of a well-worded paragraph setting the problem before the reader as pointedly and courteously as a visitor would state his mission to his host, we have them sneaking obliquely in at the side door, unshaven and unkempt. For them no introductory gesture, no "Good-day, sir," no gracious hand-shake. They slouch into a chair, staring glumly at their shoes, and abruptly announce—to themselves or not, we never know—"It has been shown by Blotz (3), Carbonetzky (6), Screed (32), and Moss (21) that the female of the white rat responds negatively to electric shock." All right, sir, I say; so what? Tell me first why I should care; *then* I will listen.

A certain number of people already do care, you will say, and (if by this time I have tried your patience sufficiently) you will add that I am an irreverent female who knows nothing about rats. But, I contend, if the article is good, if the experiment was meaningful, if the behavior of the shocked rat has implications for human learning, your words as author and as a bringer of worthwhile news ought to be read by others than the handful who are already so motivated as to plough doggedly into them. And they might so easily be thus read—to the greater broadening of psychology in general—if they were intelligently introduced. A leading paragraph to say, as would any emissary, why you are here and why you presume on the time of your reader—this, it seems to me, increases one's chances of being heard out of all proportion to the trouble taken. One good paragraph at the very start, indeed, accomplishes all sorts of magic. It heads the work in the right direction, it sets the tone, it secures a reader. If anywhere in the article there must be hurried or slipshod presentation, let it not be here, for the penalty is too great.

In a sense, each subsequent paragraph throughout the article presents in miniature the problems of the first. At each such break the author is in danger of losing his reader, at least his casual reader. After a man has finished one paragraph and before he has begun another, that is the logical time for him to pull away and close the book. Since there is, as it were, a pause in the conversation, he may be quite willing to shuffle his feet and rise from his chair to indicate that the interview is at an end. But if at such an instant, the visitor chimes in with, "Before I go, I must tell you what I heard confidentially last week from the British Ministry of Information,"

then things are different. An author too assures himself of continuing attention if he begins each paragraph strongly. I do not say, you observe, that he must pull a rabbit out of his hat on every page, but only that he begin his paragraphs firmly and as if he himself knew why he had embarked upon them.

For this purpose I am partial to the use of the lead sentences of journalism—*lead* in the sense of leading a horse; not, heaven forbid, heavy as lead. After one good opening sentence of force and definiteness, one can tolerate a good deal of otherwise fatiguing detail in a paragraph. The formulation of such a sentence, moreover, helps the author keep the proper orientation and balance in his article as a whole. For at each paragraph he is thus forced to pause and ask himself exactly what *is* its significance, what its place in the total scheme. And so life for his intelligent ghost becomes a bed of roses.

As to the structure of the paragraph as a whole, every schoolboy can outline it, and so few schoolboys, once they are grown up, remember to pay any attention thereto. It is, unfortunately, so simple as to be obvious and thus easily ignored; it consists merely of the statement of an idea, its development, its conclusion. The same structural design, as a matter of fact, serves for the article as a whole, or for its larger subdivisions. The whole business comes down once more to a question of how best to serve one's data and one's reader. The scientific writer plays fair with both if he presents his material in paragraphs that unfold with logic and sweet reasonableness—neither stalling along interminably, weighted down with an overload of disconnected afterthoughts, nor bumping along like a kangaroo, one short and disjointed paragraph at every hop.

Ask a writer of moderate experience about "style," however, and he is likely to tell you not about paragraphs but about sentences and word order; for it is there, of course, that literary style betrays itself most easily and most persistently. On such a subject as sentence structure, the critic equipped with even a stump of a blue pencil can hardly restrain himself from rushing headlong in a dozen directions. There is one point, however, that for me stands at the crux of the matter.

It is that sentences need to have cadence just as conversation has cadence. No one says every word on the same pitch as every other word; the result would be monotonous beyond endurance. Yet it is not unusual for authors to write sentence after sentence on a dead

level, each one like the preceding and like the following, blessed with no vestige of rise and fall. And, doing so, they are even worse off than they would be if in conversing they kept to the same inhuman monotone; for in conversation they could still pound the table with irate fist, wag their heads, or even stick an irreverent tongue in cheek. But in writing they have none of these insinuations at their command; unless, that is, such hints be embodied in their sentences. And sentences, to fulfil so many functions, must be flexible. For the achieving of such flexibility there are various devices.

(1) One is by varying the structure of the sentence itself. When it happens that a writer knows only one type of sentence, it is unfortunately true that that one type will be the compound variety. A compound sentence, may I remark parenthetically (since most people hear such terms bandied about only in grade school), is one in which two coordinate clauses are joined by a conjunction. "The horse jumped, and the jockey fell off." There is nothing wrong with such sentences; grammatically they are without blemish. Only observe that by their very nature they preserve an even and unbroken level of discourse. These are *coordinate* clauses, each as important as the other, each making an equal bid for the eye of the reader. When sentence after sentence marches by, all so stolid and phlegmatic, the result on the part of the reader is either slumber (if he is fortunate) or tantrums (if he is not). Not only, however, are such sentences monotonous; they betray an immature level of thought. The child too, before he learns connections and interrelations, points to objects as separate entities, coordinates linked by conjunctions. But the adult, presumably, sees deeper and is at home in a more complicated world. His thought—and his sentences—should then reflect his greater sophistication.

Just as reminders, I list a few of the many ways in which one can write a complex sentence or a dressed-up simple sentence rather than a compound. (a) By the use of such words as *when, although, because, since, as, even though, whereas, albeit* to introduce the subordinate clause: "Because the horse shied, the jockey fell off." (b) By the use of participles, those verb derivatives so feared lest they "dangle" but actually so harmless and useful: "Stumbling as he ran, the horse threw his jockey." (c) By substituting a semi-colon for the conjunction: "The horse reared; heavily the jockey fell." (d) By the introduction of a modifying clause which, like

a cadenza, sometimes renders more pleasing the underlying monotony of a recurrent structure: "Fearful as ever when confronted by the snake coiling in his path, the horse shied, and his jockey fell." (And, leaving the unfortunate horse thus multiply tripped, on to the next point.)

(2) Another device is to vary the length of the sentence. Since scientific writing frequently runs to rather long sentences, as is natural when explanations must be provided and implications made explicit, on several counts it is well to throw in now and then a direct and simple statement. Its abruptness shocks the reader pleasantly to attention. And, even if he was in no danger of lagging, even if the preceding sentences have been models of variety and grace, a short one allows him a moment's rest, both for his eye and for his mind. A reader stays better natured and more receptive when his nose is not pressed too firmly to the grindstone.

(3) In the cause of both cadence and emphasis it is well to censor sharply the order of words within a sentence. (a) The "however," "in other words," and "moreovers" should ordinarily be buried harmlessly out of sight. They are seldom the keywords of a sentence. The positions of honor in any sentence are the beginning and the end; the word that the eye sees first and the word that it sees last are the ones that build the emphasis. To waste such key positions, therefore, on mere connectives is but poor strategy. Where is the vital word in your idea—the punch? Put *that* last; make the reader wait for it, make him wonder about it, at last sense its fitness. (b) Shamelessly deprive him of too ready closure lest he stop paying attention. It is a cagey trick occasionally to arrange the order of words in such a way that the thought is incomplete until the very last word of the sentence has been enunciated. This means planning ahead—no phrases tacked on to dangle patently as afterthoughts. (c) This means too that now and then the word order will be unexpected, purposely reversed from the normal. No better device exists for calling attention to a particular word than thus to wrest it from its accustomed ranks; it sticks up like a pointing finger. Worked too often, to be sure, such a trick labels an article as akin to "Timestyle"; but it need not be worked too often. Discreetly managed it is a useful dodge in the routing of monotony. (d) It goes without saying, of course—usually, but not quite invariably; hence I include it in a hasty sidewise glance—

that modifying phrases ordinarily make most sense if placed next to the word they modify.

(4) And finally there is this thing called "style," an indefinable something which serves as the reflection of personality, whether in dress, in carriage, in writing, or what you will. Here is the true battleground of the critics; here it is where mechanics and craft leave off, and something else enters in. In such a sense, I am convinced, style cannot be taught; its development is from within outward, not vice versa. My plea here, however, is that writers in professional journals dare permit themselves a style, that they permit their individualities, as it were, to glint through the crevices. If instead of being so completely formal and correct, they would unbend to the point of revealing just a little of their everyday conversational selves, their writing would gain in both force and charm. Fortunately, no writer can wholly stifle his expressive mannerisms; but many try. And that is the reader's loss.

When one turns from sentences as such to the words which make up those sentences, the same principles hold. Just as the subtly varied sentence beguiles its reader to further perusal, so the colorful word too commands attention. Although in scientific writing words must be chosen first for their utter accuracy, it is deplorably unenterprising of an author to sit back on that account with never an attempt at force or vividness. Because the field is limited, indeed, the challenge is all the more compelling. By "colorful" words I do not mean lurid words or high-falutin' words—though for myself I sometimes am driven to think I should prefer either to a dead level of cautious monotony which actually succeeds in communicating little. I mean, rather, words which are forceful, words which are simple and direct, which are perhaps not quite the expected expression but which, once said, strike the hearer as being in their context exactly appropriate; words which, above all, break away from scientific clichés and the worship of the polysyllabic. The latter can become especially annoying. A vast vocabulary of polysyllables, rendering possible the substitution of some esoteric term for every term easily comprehended by the reader, does not necessarily guarantee that one is of the elect; science is science because of its content, not because it must be discussed in language baffling to the uninitiated. If the author knows his material well, indeed, if he has troubled to think it through, quite complex problems may be presented with startling directness and

simplicity. Which is not to deny, of course, that there are formulae which must be presented as formulae, or complex laws which cannot be robbed of their complexity. But where a choice exists—and it exists more often than is realized—simplicity and directness and a fresh outlook count for more than mountains of clichés and long-winded phrases.

To suggest that I conclude this topic without even listing one or two of my own pet aversions would be inhuman. Especially when there are such things in the world as: “thus, for example”; “we see in Table 3 that . . .”; “this shows that . . .”; “this” repeated over and over (“we did this,” “we found this,” “this proved,” “in this way”), half the time needing a noun to modify (“this *procedure* proved”), half the time needing a synonym (“in *such* a way we were led to conclude”); the adjectival noun; and always the passive voice. The latter, I confess, baffles me. Why should writers go out of their way to spoil whatever directness and force remain at their disposal? Why must they write, “It was decided to experiment thus,” as if they themselves had been resident on Mars at the moment and knew nothing of this thing which now, lo and behold, they find thrown in their laps? Are they modest; do they think it scientific to run from the pronoun *I*; is it part of the scientific credo never to say a thing simply when you can reach for it obliquely? *I* don’t know.

PESKY DETAILS

In preparing an article for actual publication there are a number of bothersome details; one of the measures of a workmanlike product is the degree to which these minor problems have been met and thrown. So many papers have to journey back from editor to author on account of footnote trouble, or tables organized badly, or undistinguished titles—just details, but important details.

The title of an article is its first introduction to the reader; even more than the first paragraph it may send a potential reader scurrying off pellmell, or else egg him on to read further. For the purposes of scientific communication, of course, a title needs to be accurate and informative; though Robert Benchley may entitle a book *The Treasurer’s Report and Other Aspects of Community Singing*, the author of a paper on emotional responses would hardly label it as the workbook of the Hong Kong Fire Department. Yet

there is, even so, a point beyond which accuracy itself becomes humorous. Consider such a title as the following—which, although it is fictitious, is not exaggerated out of all sight of its real-life brethren: “The reaction of seventy-nine Chinese children of nursery school age to a situation of feeding frustration as measured by the McGillicuddy-Dribsky Test of Emotional Dominance Form B.” You may say that such a title is highly accurate. In its denotations, its externals, doubtless it is; and in its connotations—are they too, one shudderingly wonders, equally accurate? Is the tone of the article as dull as its title presages? For a title does more than label a piece of writing. It says, this article has skill, courage, imagination, wisdom, or—as the case may, alas, be—it has dreariness, pedantic detail ill presented, many trees but no forest. Even though the titles in a scholarly journal cannot, obviously, partake of the tone of tabloid headlines, they too can have their share of a dignified brand of come-on. And the quality which to an academic reader serves as the come-on is, it seems to me, a recognition of broader significance. Why should one read about the seventy-nine slant-eyed Chinese urchins? Because their behavior constitutes one additional hint toward the solution of the riddle of cultural determination. To advertise such a fact I should prefer some such title as “The cultural determination of frustration behavior in children”—being prepared, in so good a cause, even to wink at the abuse of the adjectival noun.

The matter of footnotes and references is bothersome but basically simple. The best plan is to refer to the journal for which the article is intended, and then to follow its customary form rigorously. That the necessary information be complete is the main point; for although an editor or the editor's slavey can with some ease correct a mistaken sequence in a reference—whether the volume number or the year is to be mentioned first—he cannot without considerable trouble repair to a library and actually supply missing details. Almost every form of citation demands these fundamental items: author, title of book, place of publication, publisher, year of publication, page reference; or, in the case of journals: author, title of article, name of journal, year, volume, page. Incidentally, a sin one more degree heinous than an incomplete reference is an inaccurate reference; the former will be caught by the editor or the printer, whereas the latter will stand in print as an annoyance to future investigators and a monument to the writer's carelessness.

The case of the useless footnote is still another matter, and an equally reprehensible one. The footnote is a device for clarification, be it noted; not a means of beclouding an already doubtful issue by hedging it with reservations and afterthoughts, nor of parading before the reader a demonstration of one's fancy erudition. Surely science can get along without window-dressing; and the reader will gladly concede, on the evidence of a well-wrought article, the author's claim to an adequate education. To be dragged along by the collar to witness a promenade of all those volumes whose titles are known to the author seems, strangely enough, to many a reader to be a waste of time and a bore to boot. Neither, for that matter, is the footnote the proper repository for all the interesting sidelights on the material under discussion in the text; combine them in the main body of the article, and let us have our entertainment without digging it out of eight-point type. But the final word on this whole subject has, of course, been said by a gentleman named Frank Sullivan in a periodical called *The New Yorker*.¹ To dilate further on the subject would be merely an inferior kind of duplication.

As for tables, that other bugbear, they too should be clear and sparse. Include them only when they actually make possible the presentation of data more clearly than would a few sentences of the text; and, having thus included them, do not waste space by repeating in the text everything in them. Point out the high spots, yes, but give the reader credit for being able to understand the rest. Another point: in the construction of a table, the main variable should be stated in the first column at the left; the minor attributes in respect to which it varies should be placed in the other columns. And whether a table is to be ruled or not (journals vary in their policy), it should be so organized and spaced as to be clear with or without rules. It should not, that is, suddenly change headings after a row or two of figures, thus requiring a whole new organization. And, of course, one should never place in any column a figure which does not definitely belong under the specific heading of that column—as sometimes happens, for example, when in a column given over to *percentages* one suddenly gives a total *number* at the bottom. (In this case the objection could be met by inserting

¹ So fitting is it to include as my only footnote a reference to Mr. Sullivan's article that I cannot bring myself to refrain. *Vide* Sullivan, F., A garland of *ibids* for Van Wyck Brooks, *The New Yorker*, April 19, 1941, 17, 15.

"N=189" or whatever the figure, under the heading of the column.)

Two final matters of routine come to mind. (a) Even if the table is to be ruled in final form, leave it unruled when you submit the manuscript; since rules and type sizes are matters of editorial custom within each particular journal, it is best for the editor, who knows these routines thoroughly, to mark copy for the printer. (b) In typing tables, see to it not only that the alignment is correct but that rather generous spaces are left between headings, columns, and so on. Then if the editor in the course of preparing the material for press does have to suggest minor changes, he will have room for unequivocal instructions to the printer.

CONCLUSIONS

Here, where by rights there should be some very scholarly remarks on the implications of the material thus far presented, I can only survey with amazement my pronouncements, set forth with so sage an air of omniscience—and take to my heels in confusion. Turning thus to flee, I have time merely to remark how pleasant it has been, this process of working off my suppressed animus against those so lucky as to see their words in print. Now that I too am become an "author," I shall perhaps never again be able to sit so smugly on the other side of the fence. That, I fancy, is my conclusion.

RELATIONSHIP OF TESTS OF PERSISTENCE TO OTHER MEASURES OF CONTINUANCE OF ACTIVITIES

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VARIOUS approaches have been made to a behavior phenomenon which can be described as a general tendency-to-continue an activity, once it is started. Though these investigations are listed under such different terms as perseveration, persistence, the resumption of interrupted activities, and/or the Zeigarnik effect, difficulties in changing set, etc., it was considered possible that correlations among such varied tests of tendency-to-continue might reveal relationships which had not been suspected. Scores from twenty-nine tests, selected from a much larger number that had been used by other investigators, were intercorrelated, and Thurstone's multiple factor analysis was then applied to the correlation matrix. It was not considered likely that a general factor ran through the variety of tests employed; but that some so-called tests of perseveration might also be considered tests of persistence, or that resumption of interrupted activities might be determined by the same factor, or factors, influencing the scores on tests of perseveration or of persistence, were some of the possibilities that were considered and that led to the present study.

SELECTION OF TESTS

The tests were selected upon two standards: (1) a test should be representative of what it purports to measure; (2) it should have satisfactory reliability.

A. Tests of Persistence

Thornton's factor analysis of tests of persistence (17) isolated a group of tests whose scores were primarily determined by a factor he called "keeping on at a task" (P1). It was decided to use the tests with high loadings on this factor as most likely to correlate with any other measures we might use of a general tendency-to-continue. Other factors, which he called "withstanding discomfort to achieve a goal (WD)" and a "sex-strength" factor, are no doubt also representative of any so-called trait of persistence, but they are less likely to influence tests of perseveration and methods using

interrupted activities, in which we were also interested. However, to the six tests which had the highest loadings on his P1 factor, we added three measures of endurance and three of strength. These tests are now briefly described.

Word building test.

1. One score was based on the number of words constructed from the letters BRTAOU.

2. Time for the first ten words.

3. Time S continued to work at the task. Our procedure differed from Thornton's in so far as we did not stop the subjects at the end of 30 minutes.¹ Likewise we did not eliminate any words in scoring the subjects.²

Perceptual ability test. The subjects were asked to read a story that became increasingly difficult because of the increasing changes in the spacing of letters and increasing radical alterations in the punctuation and capitalization. Finally the material ceased to make "sense," but all the subjects continued to believe that the material could be read if they worked "hard enough." Three scores were obtained:

4. the amount of continuous material deciphered correctly;

5. the time taken to complete the first three paragraphs;

6. the time the subject continued to work at the task before "giving up."

7. As we were interested in determining whether the subjects were stopping because they thought the experimenter would be "tired of waiting on them" or because they, themselves, were willing to quit, we added another score to those used by Thornton. When the subjects indicated that they could read no further, the experimenter said, "This is a test for persistence. Do you wish to continue longer?" The score was the time that they continued in response to this statement.

8. *Motor inhibition.* This test is Thornton's adaptation of motor inhibition of the Downey Group Will-Temperament Test. Thornton's exact procedure and scoring methods were followed (17, 7-8). Estimated reliability, Spearman-Brown formula, .95 (17, 21).

9. *Holding the breath.* This test was included from Thornton's battery though its loading was not high (.264) on the factor in which we were primarily interested, i.e., willingness to keep on at a task. However the loading on willingness to endure discomfort was .405 and .473 on sex-strength. His exact procedure was followed (17, 7). Estimated reliability, Spearman-Brown formula, .95 (17, 21).

10. *Strength of grip.*

11 and 12. *Maintained grip.* Thornton's tests were modified by using a finger rather than a hand dynamometer.³ In a series of seven trials the average pull of each subject was obtained. Then in three trials the subject was asked to maintain the marker below a point on the scale set at two-thirds of the median of the seven pulls. Spaced trials. Only the right hand was tested. Estimated reliability on maintained grip, Spearman-Brown formula, with hand dynamometer, .85 (17, 21).

13 and 14. *Height and Weight* were included as measures, in part, of Thornton's sex-strength factor.

15. *Rating scale on persistence.* See (17, 42).

¹ Two of our subjects went beyond the 30 minutes. One worked for an hour, when he was stopped by the experimenter.

² Thornton eliminated, in part, differences in ability by scoring only those words which were found in 26 commonly known words that could be made from the letters used.

³ See page 9 in Dashiell's *An experimental manual in psychology* for description of apparatus and method of use.

B. Tests of Perseveration

In order to select representative tests of perseveration—a phenomena which has had a varied and critical history—it should be considered in the cognitive, motor, and sensory fields. A battery limited by the time which could be obtained from each subject made this impossible. The following nine tests were, however, selected either because they were representative of one of these three fields and/or because they had a high reported reliability.

16. *A motor test of perseveration—tapping speed.* The score was the mean time in seconds for 100 taps⁴ for three trials with the subject instructed to choose a rate that was “convenient, natural” for him. Repeat reliability, 5 minutes apart, .98 (8, 35). Brown-Spearman estimated reliability, this study, .95.

17 and 18. *Effect of a slower intervening rate on the “natural” tapping rate.* Added to this first motor test was a second built upon a suggestion of Cathcart and Dawson (4), who found that subjects working with an ergometer tended to have their natural periodic to-and-fro movement displaced toward any intervening rate. In as much as their reported results indicate individual differences of some consistency, this method was used to measure the subject’s general tendency-to-continue by finding the effect on his “natural” tapping rate of an intervening slower rate. Having determined the “natural” tapping rate by three spaced trials, a subject tapped to a metronome so set that he was slowed to one-half his “natural” rate. The person who could tap on an average 100 times in 20 seconds was now asked, for instance, to tap at a rate that would produce 100 taps in 40 seconds. Immediately after the intervening rate, the subject was again asked to choose a rate that was “natural, convenient” for him. Two scores were used: the difference between the return rate and the average “natural” rate and the return rate divided by the average natural rate; the latter was used in order to take out the varying individual speeds.

19. *Measures of the ability to shift set.* Jasper (8) includes some motor perseveration tests similar to those used by R. B. Cattell and Maller and Elkin. The general method is to determine an individual’s perseveration score by comparing the amount accomplished in a certain time when there is a continuance of a set (as continuous adding) with the amount when there is a demand for alternation (as alternately adding and subtracting).⁵ Cattell’s first two tests for adults, listed in his text (5, 212), were chosen and the procedure recommended by him was followed.

20. Maller and Elkin Attention Test, also directed at interference effects, was included.

21. Number of “No” answers on ten questions taken from Maller-Elkin test:

1. Are you absent-minded? Forget time or misplace things?
2. Are you often bothered by a melody or song that keeps coming to your mind without your being able to stop it?
3. Do you get into a very sad mood without being able to “shake it off” easily?
4. Do you have the same dream over and over again? etc.

⁴ Supposedly the slower the tapping rate, the greater the perseveration.

⁵ Such interference effects have, of course, been utilized by various investigators, i.e., Bernstein (2), Culler (6), Lankes (10), Jersild (9), etc.

22. *Sensory perseveration tests.* Thermal equilibrium, or the time taken by a subject to report that a hand held in water at 45° C. for one minute now felt the same when placed with the other hand held continuously in water at 32° C. (16, 393).

23. Lag of negative after-image.⁶

24. Fluctuations of ambiguous figures. Shevach (16) suggests that the shift is not due solely to the object but to the cortical "set," which should last longer with the perseverator than with the non-perseverator. Whatever the explanation, the wide individual differences in the rate of fluctuations are constant. Estimated reliability from four trials, Spearman-Brown formula, .96. Also see (13, 257).

On the basis of Porter's work (13), the Necker cube was chosen as the "best single figure for measuring individual difference" (13, 253). Her procedure and directions⁷ were followed for four two-minute periods on the same day.

C. Interrupted Activities

25. In a preceding article (15) the writer reported the two tests, procedure, and scoring methods used with the interrupted activities when resumption behavior was recorded (Ovsiankina technique). In a previous study with children (14), using a similar behavior scale in order to score the subjects, a reliability of .85 was obtained when eleven tests were included (14, 166). The correlation between the two tests used with the adult subjects in the present study was .42. Estimated reliability, Spearman-Brown, .59.

26. The method of obtaining the Zeigarnik effect was an adaptation of a group method suggested by Pachauri (12, 452). This method, as adapted by the writer, lowered the usual average ratio of 2.00 obtained in group experiments to 1.2, but wide individual differences continued to exist (range of .35 to 3.40).

D. Other Tests Included

27. Otis Self-Administering Test, Form A.

28. Thurstone's scale on Attitude toward the Constitution.

29. Thurstone's scale on Attitude toward Communism. The two attitude scales were included on the possibility that a general habit of thinking in regard to social changes might be related to a general habit of continuing, or non-continuing, an activity.

SUBJECTS

Thirty-eight college adults, sophomores or above in class standing, from the University of North Carolina served as subjects. Their intelligence quotients on the Otis group test ranged from 99 to 133.

METHOD

Tests from 1-14, 16-19, and 22-25 were administered individually. The remaining tests were given to groups of approximately 10 persons. Due to the small number of subjects, the 406 intercorrelations were obtained from ungrouped data. Using Thurstone's

⁶ This test was probably the least accurate of any measure used since no attempt was made to control eye or head movements. Also the length of exposure of original stimulus was unnecessarily long (3 minutes).

⁷ No attempt was made to control the nature of the fluctuations. The subjects reported by tapping a key any change in the figure.

multiple factor analysis, seven factors were extracted and are shown in Table 1 after rotation.⁸

TABLE 1
THE ROTATED FACTORIAL MATRIX

TESTS	I	II	III	IV	V	VI	VII	<i>h</i>
1.	.476	.313	.073	-.208	.500	-.061	-.258	.693
2.	-.202	.276	-.160	.138	-.463	.137	-.039	.396
3.	.523	.580	-.134	.095	-.006	-.148	-.302	.751
4.	.398	.217	-.107	.232	.497	.055	.142	.541
5.	-.048	-.054	.148	.300	-.358	-.129	.524	.537
6.	.693	.240	.154	.405	-.058	.209	.235	.880
7.	.557	-.056	.166	.183	.331	.154	-.098	.518
8.	-.103	-.056	.081	-.469	-.041	.085	.277	.329
9.	.320	-.140	-.076	.395	.101	.080	-.196	.339
10.	.038	-.265	-.012	.785	-.132	-.085	-.188	.748
11.	-.073	.268	.792	.347	.046	-.057	-.120	.844
12.	-.005	.492	.666	.355	.050	-.134	-.135	.850
13.	.090	.121	-.027	.601	.052	-.246	-.039	.449
14.	.016	-.240	.103	.586	.053	-.292	.011	.500
15.	.262	-.278	.456	.034	-.014	.071	.118	.375
16.	-.111	.430	-.074	.022	-.093	-.007	.537	.501
17.	.057	.760	.132	-.155	-.159	.178	.077	.685
18.	.179	.582	.196	.033	-.250	.287	-.250	.620
19.	.346	-.048	-.153	-.051	-.237	-.187	.026	.241
20.	-.139	-.189	.014	.274	-.149	.289	.258	.303
21.	.441	-.397	.238	-.055	-.264	.041	.130	.500
22.	.297	.271	-.010	.098	.011	.582	-.219	.558
23.	-.274	.156	.266	-.154	.282	-.238	.337	.442
24.	-.217	.285	-.244	.310	.066	.036	.066	.294
25.	.439	-.065	-.050	.009	-.036	-.190	.343	.355
26.	.406	-.107	.236	-.277	-.180	-.067	-.053	.348
27.	-.116	-.262	-.019	.022	.686	.146	.065	.579
28.	.133	-.169	-.211	.111	-.183	-.704	.169	.675
29.	-.110	.237	-.015	.031	.248	.629	-.158	.551

RESULTS

Tests which received weights above .30, as shown in Table 1, are presented below and interpretations attempted for each factor.

FACTOR I

Time spent on increasingly difficult material.....	.69
Time continued on increasingly difficult material in response to statement: "This is a test of persistence".....	.56
Time spent in making words from 6 letters.....	.52
Number of words made from 6 letters.....	.48
Score on behavior scale measuring tendency-to-continue when interrupted...	.44
Number of "no" answers concerning recurrence effects.....	.44
Zeigarnik ratio .....	.41
Amount read of increasingly difficult material.....	.40
Cattell's tests of perseveration (ability to shift set).....	.35
Time holding breath .....	.32

⁸ The original correlational matrix and the centroid factor loadings will not be presented, but may be obtained by a request addressed to the writer. The distributions of the residuals had a mean of .004 and a standard deviation of .002.

This factor is identified as a habit of keeping on at a task, once it is started. Woodworth was one of the early writers to recognize the force that a habit may possess in its own right. But we would emphasize that here we have a general habit, *i.e.*, a pattern of behavior not confined to any one activity, or even to a class of activities, but appearing even when the specific task may seem absurd, or is apparently annoying, or not even familiar to the subject. A general habit of finishing *whatever is started* is probably fundamental in the so-called trait of persistence.

Various investigations have suggested such an interpretation. Lewin and others have used the special interruption technique in a variety of tasks and speak of the demand value of "quasi-needs" as shown by resumption behavior. The writer measured tendency-to-continue by building a scale based upon behavior under task-interruption, using both refusal to be interrupted as well as resumption behavior. In a factor analysis of the intercorrelations of eleven tests, scoring the children used as subjects by means of this behavior scale, two factors were found; one of these was sufficiently general to be named tendency-to-continue (14). Brogden (3) in his analysis of forty character tests found a factor which he called "persistence," but it appears to be similar to the factor which we present above. The chief attribute of the person rating high upon his factor would be a "tendency to continue a steady work output in spite of the distractions arising from fatigue, boredom, jokes, puzzles," etc. (3, 50-51). Thornton (17) has shown that the supposed trait of persistence is the result of several factors, one of which was called "willingness to spend time on a task." Although various disguises have been assumed by this factor, it would appear that these investigations have been attacking the same phenomenon.

On the basis of the following reasoning, we have therefore identified our first factor as a general habit of keeping on at *any* task once it is started. (1) Our weights on the tests taken from Thornton's battery as measures of his factor called "willingness to keep on at a task" are similar to his, though they are slightly lower. His weights are given below in parentheses following our weights: time spent on increasingly difficult material, .69 (.76); time spent on words, .52 (.80); number of words, .48 (.55); amount read of difficult material, .40 (.51); and time holding breath, .32 (.26). An additional score, similar to these, but not used by Thornton—time continued on difficult material in response to statement that it was

a test of persistence—receives a weight of .56. All of these are measures, either in time or quantity accomplished, of keeping on at a task. Thornton suggested that a subject high on such tests was strong on “willingness to spend time at a task, perhaps a lack of pressure to activity or a lack of demand for change” (17, 31).

(2) Our factor also has weights on tests of tendency-to-continue which use the interruption technique: (a) the behavior used was refusal-to-be-interrupted and the resumption of interrupted tasks and (b) the Zeigarnik ratio, *i.e.*, the memory for interrupted activities was compared with that for non-interrupted activities. If the subjects had a general habit of keeping on at a task, once they were started, they raised their scores by refusing either completely or in part to be blocked, and/or they quickly resumed when given an opportunity; with the test adapted from Zeigarnik, the comparative recall of interrupted tasks was greatest for subjects who were dominated by the habit of finishing what they had begun.

(3) Along with the tests of persistence discussed above, and the methods using the interruption technique, we find that Cattell’s tests of perseveration obtain a weight of .35 on this factor. As Brogden found, measures of the ability to shift set are affected by the strength of tendency-to-continue that a subject possesses (3, 50). Apparently a person high on this factor is more disturbed by the necessity to alternate activities than is someone not affected by this persistence factor.

(4) One weight of .44 seems to fit into the above interpretation because the high “no” score on the questions such as “Are you bothered by the return of ideas,” “Do you find it difficult to get used to new people,” etc., would probably indicate a well-adjusted person. And it seems reasonable that anyone who has a general habit of finishing what he starts would more likely belong to such a classification.⁹

It should be remembered that a person operating under this factor is not dominated by the desire for any specific goal. The end and aim of the task or activity may be influential (at the moment of “choice”), but once the individual starts the activity, then the general goal of finishing may become more important than the specific reward value of the specific goal. Of course this generalized

⁹ Abel (1) found that individuals with low Schneider index—indicating instability in neuro-circulatory activity—recall more completed tasks, while interrupted tasks are recalled more by those with high index. As McFarland and Huddleson (11) found psychotic and neurotic subjects have predominantly low indices, these findings suggest that neuroticism and low persistency (as measured by interruption technique) are related.

response to any task once started, this "need for completion," is far greater with some individuals than with others, and, as has been implied herein, probably results from the training given them in continuing at any activities which they start.

FACTOR II

Effect on natural tapping rate of a slower rhythm.....	.76
Ratio of average tapping rate and rate adopted following slower tapping rate.....	.58
Total time on words.....	.58
Longest trial of maintained grip.....	.49
Natural tapping rate .....	.43
Number of "no" answers on questions directed at recurrence effects.....	— .40
Number of words .....	.31

Even as the first factor is probably basic to the common understanding of the term persistence, so this second factor is placed under the broad term of perseveration. However, we confine our interpretation of this old term to this special meaning: a physiological inertia, with the term "physiological" being chosen in order that this continuance effect may not be considered as confined solely to a neural state, as older writers implied. We believe we have here some evidence of perseveration in the sense in which Dashiell was apparently using the term in suggesting a basis for set: "Something in the way of a hang-over of the immediately preceding manner of responding, or a persisting after-image of a vanished stimulus, or a continuing verbal formulation, dominates the behavior of the succeeding moments" (7, 302).

This physiological lag, this "hang-over" of preceding response, is shown (1) in the motor performance of tapping, both in the interference wrought on the natural tapping rate by an intervening slower rate, as well as in the natural tapping rate adopted; (2) in the "ideational" field, increasing the time on words; (3) in maintenance of muscular tension on the finger dynamometer; and (4) in recurrence effects as shown in reports of the return of dreams, melodies, moods, "ideas," etc.

FACTOR III

Average maintained grip .....	.79
Longest trial of maintained grip.....	.67
Subject's rating on his own persistence.....	.42

This third factor influences the scores on the tests which were included as measures of willingness and/or ability to endure dis-

comfort (17, 30). The weights of .79 and .67 on the two scores of maintenance of grip identify this factor as endurance; both from the comments of the subjects, and from facial and bodily movements, it appeared that a severe and painful struggle was involved in keeping the marker at the selected place on the finger dynamometer. Thornton's factor which he similarly labeled as "with-standing discomfort" included weights on maintained grip as well as on other endurance tests (shock and pressure tests). These latter tests were not included in our battery; however, holding breath obtained a weight of .40 from Thornton, but has no weight on our factor of endurance. Nevertheless we feel that the weights indicated above are evidence of an endurance factor, and that the weight of .45 on the rating scale of persistence throws some light on how the judgments of our subjects were made when they rated themselves on persistence.

FACTOR IV

Strength of grip.....	.78
Height.....	.60
Weight.....	.59
Time on increasingly difficult material.....	.46
Score on motor inhibition (high score indicates lack of inhibition).....	— .47
Time holding breath.....	.40
Longest maintained grip.....	.35
Average maintained grip.....	.35
Total fluctuations of ambiguous figure.....	.31
Time to read three paragraphs.....	.30

We have in Factor IV weights on items which would mark it as similar to Thornton's Sex-Strength factor. (He included sex in his battery.) Four of the items listed above also received weights in Thornton's analysis in the same descending order, although again his weights are slightly higher than found in our study. His weights are given in parentheses following ours: strength of grip, .78 (.89); height, .60 (.84); weight, .59 (.70); and time holding breath .40 (.47). But we have in addition weights on certain items which are not apparently solely determined by strength but by what we have chosen to call "control." We find a weight of —.46 on motor inhibition, certainly a test of the control a subject exercises over his tendency to trace the line at his natural rate. Likewise the time scores on increasingly difficult material, as well as maintenance of grip, may be considered indices of the ability to control the "desire" to escape from a disagreeable situation. However, the last two

items listed above, having small weights of .31 and .30, do not seem to fit into this interpretation.

FACTOR V

Otis intelligence test .....	.68
Amount of difficult material read.....	.50
Number of words made from 6 letters.....	.50
Time on ten words.....	— .46
Time to read three paragraphs.....	— .36
Time continued on difficult material.....	.33

This factor indicates the effect of intelligence as measured by the Otis Self-Administering Test, Higher Examination, with a 20-minute time limit. It appears reasonable that a person receiving a high score on a time-limit intelligence test would likewise read more difficult material, make more words from 6 letters, take a shorter time to get the first ten words, read the first three paragraphs of the difficult material more quickly, and probably continue longer to attempt to decipher difficult material. Hence this factor is identified as "intelligence," *i.e.*, intelligence as measured by the particular test used in the battery, a test probably influenced by speed of reaction.

FACTOR VI

Attitude favorable to the constitution.....	---.71
Attitude favorable to communism.....	.63
Time taken to make a sensory judgment.....	.58

Only three significant weights were found on the fifth factor. The weights on the two attitude scales, opposed in sign, would seem to indicate a radical-conservative continuum, with the time taken to make a sensory judgment linked with the attitude favorable to communism. It was expected that subjects favorable to the constitution would not be favorable to communism, but it is difficult to understand why more of the latter group would likewise take a longer time to make a sensory judgment.

FACTOR VII

Natural tapping rate.....	.54
Time to read three paragraphs.....	.52
Time reported that after-image lingered.....	.34
Score on behavior scale measuring tendency-to-continue when interrupted...	.34
Total time on words.....	---.30

This factor has been called "natural tempo," *i.e.*, it is apparently a speed factor. The first two measures, with the most significant weights, are influenced by speed of performance. The rate at

which a person reacts might also determine to some extent the length of time that he reports that his after-image lingers. Likewise, as the slower individual might be more inclined to resume, he would attain a higher score on the behavior scale measuring tendency-to-continue. However, as he would have more difficulty in finding words, he would soon be convinced that he had found all the words that could be made from the six letters used. Hence the negative weight on this test.

SUMMARY

This exploratory study applied Thurstone's method of factor analysis to the intercorrelations of 29 tests, all of which were selected as measuring some form of behavior that might be called tendency-to-continue, *i.e.*, measures using the interruption technique, or tests of the so-called trait of persistence, or of perseveration, etc. Our analysis substantiated Thornton's finding that tests of persistence do not all measure the same thing. Three of our factors were identified as similar to three that Thornton isolated. However, along with tests taken from his persistence battery and which received high weights on his factor called "willingness to keep on at a task," we also found tests that use the interruption technique (both Ovsiankina and Zeigarnik methods). Likewise a small but significant weight was found on R. B. Cattell's tests of perseveration, *i.e.*, measures of the ability to shift set. We identified our first factor as a general habit of finishing any task, once started. Thornton's endurance factor and his strength factor were also apparently isolated, although we also found measures of "control" receiving weights along with the tests of strength.

Even as these three factors—"the habit of finishing whatever is started," "endurance," and "strength"—are probably basic to the trait of persistence, so we found a factor which could be placed under the broad term of perseveration. By no means would we suggest that all measures of the behavior that has been called perseverative would receive weights on this factor. Several of the tests of our battery which were taken from the literature as tests of perseveration were not included in this factor. Cattell's tests received no weights on our perseveration factor. The Maller-Elkin Test received no significant weight on this factor or on any other factor isolated. The two sensory perseveration tests—time reported for after-image, and time reported before thermal adaptation took place—received no weights on the perseveration factor. It is

possible that a larger battery of perseveration tests might isolate not only our perseveration factor, which we have tentatively called "physiological inertia," but also other group factors. Though the writer would be inclined to accept Jasper's position (8) against a general "p" factor as contrasted to some claims of the English school, it is certainly probable that scores on various tests, called tests of perseveration, are influenced by some common factors, not yet clearly distinguished. We tentatively advance our "physiological inertia" as one of these group factors.

Our fifth factor was called "intelligence" on the basis of its highest weight on the Otis Group Examination with a twenty-minute time limit. Three of the tests which received weights on this "intelligence" factor also received weights on our first factor, which is probably basic to the trait of persistence. When we attempt to measure the habit of persistence it is difficult to keep the test free from the influence of intelligence.

Our last two factors were called "radical-conservative" and "natural tempo"; both were based, however, on somewhat limited evidence.

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ERROR, SYMBOL, AND METHOD IN THE RORSCHACH TEST

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THOSE ten innocent ink-blots—the Rorschach test—have by now shown considerable potency in cutting across the human personality. Use of the test has, in consequence, spread widely, both in geographical and clinical areas. To a lesser extent it is engaging the attention of experimentalists in psychology. The present paper undertakes to examine the foundation stones of this psychological instrument. Sources of error in Rorschach test procedures, the language of the method, the applicability of operational criteria to its symbols, some confusion of issues concerning its scientific orientations, and its efficacy in patterning out clinical pictures, whether of Jacksonian or Freudian form, make up the substance of this communication.

WHAT IS PERSONALITY?

A first source of error lies in the problem of validating concepts. The Rorschach test is an instrument for studying personality. But, as Menninger has said, “of course personality is used to describe almost anything from the attributes of the soul to those of a new talcum powder.” This is true in the popular point of view. At the scientific table, the offerings derive from Freud, Bagehot, MacDougall, Adler, Kretschmer, Stern, Jung, MacCurdy, F. L. Wells, James, Meyer, Kempf, Jackson, Lewin, Spranger, Piaget, J. B. Watson; and this list is, of course, by no means complete.

Which of the “personalities” associated with these names, or any other, is the Rorschach addict investigating? The voluminous Rorschach literature shows no precise validating orientation. The writers generally anchor to the *Psychodiagnostik* (24). In being tardy in defining the unit or whole personality, the Rorschach experimenter is, however, only reflecting the difficulty which psychologists generally have always had. The numerous efforts at defining it are the proof of the unsatisfactory state of affairs. This is well seen in the—up to this writing—*ne plus ultra* on the

subject, Gordon Allport's (1) *Personality*. In the chapter entitled "Defining Personality" he finds it possible to classify the known definitions, aside from the most primitive or root meaning, into five species—to wit, theological, philosophical, juristic, sociological, bio-social—before coming to the psychological. In the psychological species he can list five specimens, before his own.

This difficulty of the psychologist is aggravated from the start by the assumption that each personality is something individual. That is, even before we attempt any definition, we must accept the proposition that there is an unbridgeable chasm between us and the object of our investigation. No personality can be entered by another, be coincident with it, or directly known by it.

CONSTRUCTS—AND OPERATIONISM

But here we can take a leaf from the physicist's book. When he wants to describe the non-experienceable object of his science, whether to represent the anatomy of the atom or a trip through non-Euclidean space, he uses the construct. "Mental constructs . . . enable us to deal with physical situations which we cannot directly experience through our senses, but with which we have contact indirectly and by inference," . . . and they usually involve the element of invention (Bridgman, 6, 53). A construct is the representation of the unknown, or of thinking concerning the unknown, through terms of the known. That the construct is not the peculiar property of physics anyone knows who has peered into a text on psychology. The most famous personality construct is Freud's: *id*, *ego*, *superego*. It reminds us, too, of something else with which Bridgman's name is chiefly associated, namely, that critical approach known as operationism. In *The Ego and the Id* (9) Freud's concepts are seen to be decidedly operationalist. The *Id* is something we do—our instincts driving us on; so is the *ego*, the attitudes we take *vis-a-vis* our fellow man; so also the *superego*, the monkey-wrench which our conscience throws into our psychological works. The whole functioning personality that we see at any given moment is *id*, *ego*, and *superego* in operation at that moment—with the finely intertwined influences of each, and all issuing in the behavior observed.

As to the virtues of operationism, again referring to Bridgman, we find "the proper definition of a concept is not in terms of its properties but in terms of actual operations," (6, 6); and again, "for

of course the true meaning of a term is to be found by observing what a man does with it, not by what he says about it," (6, 7). If these propositions hold true for physics, how much more so do they hold for personality, a phenomenon we never see, hence one that is entirely inferred from its operations? Then, too, operationism is not really so new as may appear from the present fuss among psychologists. McGeogh (21), discussing psychological science generally rather than personality, makes the point that it is "no more than an explicit formulation of the procedure which careful experimenters actually employ." "Operational" is a newer adjective, then, for what has always been a part of the scientific worker; his inner need to make known to himself, and others, the materials and processes wherewith he is working.

In Rorschach procedures, the operationist glass could well be focussed on both the "personality as a whole" and on its component processes—*e.g.*, creative fantasy, affective rapprochement, opposition trend, and the others. But it has not been so focussed except insofar as Rorschach's own broad discussions have done so.

CLINICAL ORIENTATION

Clinical workers have, to be sure, been validating with reference to the names made familiar by clinical psychiatry: schizophrenia, manic-depressive, psychopathic personality, *inter alia*. To the experienced clinician who has spent his years seeing and knowing these mentally disordered, the several tags do have significance operationally. They mean certain behavior patterns, usually exclude others, and also involve premises as to the history of the patient, *i.e.*, precedent operations. But considerable first-hand observation of these patients is necessary if the psychology of the several diseases is to be grasped. Without this experience the hazards in Rorschach investigations will be considerable [see, *e.g.*, Kelley and Barrera (16) on the test as an aid in psychiatry]. Without insight into the differential psychology of the groups—disordered or healthy—the most skilled Rorschach student may as well discard any thought that he is studying personality. He would be like the best microscopist in the world who has not been trained in the field he is observing—say physiology. The observations and reports are without blemish. But the significance of what he is seeing is not known to him. He is no physiologist. To use the Rorschach

technique successfully one must be a psychologist. Lack of clinical understanding has in fact been the greatest source of error.

But now that the student has eagerly and hopefully lived his years in a mental hospital, can he talk confidently about hysteria, depression, hebephrenia—or what have you? The answer is: That is just when he cannot do so. The difficulty of making exact psychiatric diagnosis is early borne home to the one who searches for stable frames of personality reference in the field of mental disease. Psychiatrists themselves, of course, have not been unaware of the uncertainty with which their terms of classification represent the actual behavior-operations of the individual patient. "The Kraepelinian formulation seems to draw rather definite boundaries where no actual boundaries exist; it gives an appearance of certainty with regard to prognosis which the facts hardly warrant" (Campbell, 7, 63). Terms of classification, each representing a set of operations actually observed in individual patients, are lacking. The complexity of the observed phenomena has thus far defied efforts at such definition.

One personality construct is possible and this has grown entirely out of Rorschach findings (Beck, 3; 4). Its value depends, of course, on the validity of the Rorschach symbols in representing the psychological events, or operations, claimed for them. To the extent that they do so, it should follow that regularly occurring amounts of C, F, Z, M, etc., can be established for the several personality groups, both clinical and normal. In fact, once the Rorschach patterns are etched out for the groups, it is not even necessary for laboratory purposes to think of psychological events. The test can be used as a purely behavioral tool, as are those used in animal psychology. Such and such an individual can be described in terms of so and so much Z, C, F, M, and about so much of the other factors. The construct remains, then, one which can be drawn in purely impersonal terms, much as the one which the physicists like to draw. But since the symbols represent—or so we verily believe—psychological events, we are really simultaneously also thinking in terms of mental processes and have the construct of a living and pulsing personality.

THE HALO

Before examining the separate Rorschach factors, and their operational meanings, mention should be made of one other source

of error relevant to findings for the whole personality. This is the halo which results from the examiner's knowledge of his Subject. Most Rorschach experiments have been carried on in mental hospitals or in clinics. Try as hard as he may, the examiner cannot help having some idea as to the kind of person before him. Lack of knowledge as to the diagnosis does not help. Even a relatively short experience in such a hospital sensitizes him to differences between clinical pictures. The result is that he reports not just the patient's personality as cross-sectioned by the test, but also, in part, his own (E's) impression of the patient. But since an impression is in part a function of the personality on which it is made, such a Rorschach interpretation is to that degree the examiner's personality. The remedy is the "blind" experiment in which one person administers the test; another, who has not seen the patient, interprets. A precaution that must be observed in this connection is that the two E's observe uniformity in administrative procedure.

WHAT IS F PLUS?

In the language of the Rorschach test there occur such terms and symbols as *Erfassungstypus*, *Erlebnistypus*, *Sukzessionstypus*, the already mentioned F plus, M, C, Z, and certain others, all peculiar to this technique alone. As any Rorschach worker knows, the personality as a whole is a structure which, on inspection, breaks up into these several factors. In order to derive a concept of the whole personality, it is necessary first to evaluate the individual responses in terms of these factors. It follows that the validity of the entire findings can be no better than that of these individual factors. The next essential step is, therefore, to examine the scientific stability of these factors. The possible magnitude of deviation incident to error may be gauged by considering F plus. Psychologically, its significance as reported by Rorschach (24) includes "the sharpness of form perceptions—a certain capacity for concentration (when attention is disturbed, as through flightiness, fatigue, delirium, elation, form perception becomes vague); the possession of sharply formed impressions (*Engrammen*); with memory pictures vague (as in the feeble-minded or in organic syndromes), a sharp recognition of form is not possible; the ability to bring these memory pictures to consciousness; and to pick the

one that is most similar (to the design). It requires a control over the process of perception, a criticism of the interpretation."

This is considerable psychological meaning for one symbol. The fact is, however, it has more. Extensive clinical use of the test, especially in schizophrenia, shows that, in gauging the patient's ability to construe reality accurately, this symbol is also an index to the psychic stamina wherewith he stays within the world as it is, rather than seeing it in accordance with his own personal needs. Since one's willingness to see correctly is a measure of the respect wherewith he evaluates himself, we have in the F plus a sign of the integrity of the ego itself. What then is F plus? That is, how are we to know when to score a response F plus? Rorschach's only definition is: "The norm and basis were those form responses which were given with very great frequency by a large group of healthy individuals. Thus, a certain normal range of form reaction appeared, a large number of frequently recurring responses, which are to be evaluated as sharply-perceived (*gute Formen*) responses. Whatever is seen more clearly than these form responses is similarly noted as F plus; what is more poorly, less clearly (*schlechter, unschärfer*) perceived, as F minus" (24, 23).

In practice this criterion has turned out to be indefinite. What for example is "more clearly"? Again, Rorschach does not tell us who are "normals." Also, he is confusing, as his language shows, the psychological concept of clearness with the statistical one of frequency. Then, too, he has given us no set of F plus scorings, except those included in the twenty-nine records published in the *Psychodiagnostik*.

As an alternate anchoring point, I suggest a dictum by Stevens in his vigorous evaluation of operationism as it affects psychology. He offers it as a criterion for scientific method generally. Assuming its validity, it applies to F plus, and to all Rorschach factors. This criterion is that "only those propositions based upon operations which are public and repeatable are admitted to the body of science" (25, 227). F plus can be subjected to this test very simply.

"Polar bear" is seen, in Figure VIII, for the lateral pink animal-like detail. It is so seen by a large percentage of persons chosen as an adequate sample of healthy average adults. Provisionally the response is scored F plus. "Sea-lion" is also seen in this detail, but by only a few. It is marked F minus. So with all responses. A list is kept of all the F plus and F minus judgments made of all

details and wholes in the ten figures. These thus become public property. If we repeat the test in any other adequate sample of the population the evaluations will be verified or repudiated. Until such repudiation, the provisional list is a standard of reference, assuring us that any future evaluation of the same response to the same detail will be the same. We thus stabilize the material of the Rorschach test structure. We control the method.

Without such a control list, the plus-minus scoring of any Rorschach worker is not a public and verifiable proposition. Each time it is the examiner's own private affair. The F plus percentage, and all that is based on it psychologically—accuracy of perception, intellectual control, integrity of the ego—is derived from that very fluctuating criterion, the examiner's subjective reaction. Error is rampant. I am using the term "error" throughout this paper in its root sense—a wandering about.

F plus is only one Rorschach symbol. There are some fourteen to sixteen of them. About each the question must be asked: Do they point to behavior or operations which can be observed, repeated, and seen again? In this connection I again quote from Stevens: "Science seeks to . . . (fit) a formal system of symbols . . . to empirical observations, and the propositions of science have empirical significance only when their truth can be demonstrated by a set of concrete operations" (25, 223).

With some of the Rorschach factors such operational discrimination is relatively easy—for example, with D and Dr. Löpfle (20) has offered one criterion and Hertz (13) reports an investigation comparing the experience of several investigations. The factor Z is a bit harder to differentiate, but is based on directly observable empirical data (Beck, 2). A (percentage of animals perceived) is very simple, but the distinctions between C and CF, and between CF and FC, are usually very difficult, while that between M and F are sometimes so. Even the apparently simplest fact, whether we have a scorable response at all, is, however, sometimes difficult to establish. The subject's language is not necessarily decisive. Again, a point of reference, an operational definition, is needed. It follows that for the more elusive M, which is immensely valuable as a psychological index, and for C, with its nuances, operational tests are badly needed. The check has so far been from clinical evidence, hence by inference. It can be done more directly. However the

devising of such tests is a problem for the experimental psychologist rather than for the Rorschach student.

A CONFUSION OF ISSUES

On the matter of stable frames of reference, there is today in Rorschach circles, as well as among sympathetic observers in associated fields, a confusion of two issues. The attitude is taken that since the test deals with human personality it is too complex to standardize. But difficulty of a task has not yet, in science, been an acceptable reason for eschewing it. However, the chief fallacy is that "standardization" implies the devising of numerical formulae for the several whole personality entities. (See Klopfer, Krugman, Kelley, Murphy, and Shakow, 17.) The universal objection to such a thesis then attaches, by imputation, to the obligation to examine something else, the individual Rorschach factors, where control is so absolutely essential. Then this reasoning gives an ostensibly logical warrant for evading the need for control. The primrose path of least resistance, that of subjective, uncontrolled evaluation, is thus opened up.

Some writers do, to be sure, see the issue clearly. Rapaport (23), for instance, aptly suggests the term "objectification" in place of "standardization"; and with regard to F plus, he sees the problem as that of investigating "form genesis." Hirning (14), speaking from the psychiatrist's viewpoint, notes the value of the test as an objective approach. Miale (22) puts her finger exactly on the facts when she calls Rorschach scoring "only a system of shorthand, a method whereby the interpreter may keep a picture of the basic determinants of the entire record in mind at once. . . ."

In some other writers, however, there has developed around this test the feeling that it is a sort of mysterious instrument, supra-mundane and *sui generis*, one resting on intuitive insight and not required to follow the usual canons of scientific method. The more curious fact is not that this attitude should appeal to some Rorschach workers, but that it meets with benign acceptance with other students of personality. Nor is this just the tolerance of patient colleagues for a new method. It arises from a certain orientation relative to projective methods and to personality. See, e.g., Lawrence Frank's statements in his "Comments on the proposed standardization of the Rorschach method" (8).

The rock on which the various arguments are dashing is the seeming contradiction between (a) the quantitative basis of scientific method, hence also of personality study, on the one hand, and, on the other hand, (b) the uniqueness of the personality as a whole, which being qualitative, *ex hypothesi* excludes its own quantitative delineation.

In the Rorschach test, as it happens, we have a way out. Insofar as the individual test factors are judged in accordance with stable frames of reference, quantitatively established, it is or can be a quantitatively founded method. As these factors organize into the whole personality, we are dealing with another phenomenon, in another plane, one having its own laws and forming a new level of operations. The individual Rorschach test factors do make possible an analysis on the basis of quantitative identification, without destroying the personality. They are the separate color elements which blend into the light ray as a whole. The ray still remains qualitatively itself after it has passed through the prism; as does the personality, even if we have its Rorschach psychogram. Each component color that has been analyzed out can be quantitatively measured. So can each Rorschach factor.

These are the two issues being confused: (a) the personality as a whole, governed by the laws which unit personalities follow (again I refer to Allport, *loc. cit.*, 23) and (b) the component elements, whether we are contemplating the psychological traits or the impersonal Rorschach factors which stand for these traits. These factors, to recapitulate, can and must be isolated and subjected to experimentally controlled observation. This task is carried on independently of that relating to the whole personality. The criteria in the two are different. Validation is within two totally different spheres of reference.

As one other parallel, consider the doctor who gives his patient a clean bill of health and sends him out into society's competition. He sends him as one unit. But the chart contains many data concerning the heart, lungs, metabolism, weight, height, and other component measures. And each of these measures is in units which have one determined value everywhere. The only possible basis for such standard units is a background of careful, controlled observation and measurement, and the abstracting therefrom of the findings standard for any population. As he treats his patient, the

physician is deeply interested in these separate measures: metabolism, heart rate, temperature, spinal fluid, etc., etc. He is interested, that is, not in these measures for themselves, but in evaluating them in relation to each other and then to the whole person. But each bodily activity is still being measured in the units we use only because preceding experimental method has established these units.

All of which brings us to another source of error, and principal contribution, growing out of Rorschach investigations—that concerning the relation of the whole personality to its component forces, and the organization of these into the whole structure.

TRAIT VALUES VARY

When we give the Rorschach test to schizophrenics many respond with an excess of Dr—or rarely perceived details; an excess as compared with findings for most healthy adults. And when we give the test to a group of scholars or scientists, we find that just about as many will also respond with an excess of Dr. But a serious error would be committed if we interpreted this Rorschach symbol as though it had a constant psychological value. In the professor or other scientist the rare detail points to the close and careful observer; in the schizophrenic, to a genius for finding meaning indiscriminately in what the rest of us ignore. Thus the psychological value of Dr varies, depending on the whole personality that produces it. This principle holds for all the Rorschach factors. The support for this proposition is entirely pragmatic. Experience proves it. If we try to interpret the separate symbols as representing constant values the test does not work. Validation is noticeable by its absence.

Examples are here in order. The Rorschach summary following is for a record obtained from a young woman, just under twenty, referred to Michael Reese Hospital, with the symptoms of unhappiness about her job, lack of self-confidence, jealousy, inability to express hostility, and certain compulsive acts; she is torn between her ambitions to be a musician and economic pressure. She is an only child; deserted by her father in her earliest childhood. School history is good. While patient is mature in bearing, and generally well-liked, she still feels inferior. Anxiety in relation to sex

interests was shown in psychiatric interviews. Musical ability is unquestioned.

THE RORSCHACH SUMMARY

<i>R</i> —46							
W	9	M	10 (—3)	H	6	F+%	69
D	27	CF, M—	1	Hd	6	A%	54
Dr	10	CF, Y	1	A	23	S	4
	—	CF	2	Ad	2	P	8
	46	FC	1	An	2		
Z:	64.5	Y	1	Ab	3		
Ap:	W (D) Dr!	FY+	3	Cg	2		
Or:	Methodical	F+	18	Cl	1		
		F—	8	Ls	1		
		F	1		—		
			—		46		
			46				
		EB	11/4.5				

If interpretation were made from individual factors, this record would have some ominous aspects. M, or movement responses, eleven! This response is the sign of an inner, fantasy living. Five, six, seven M is high in healthy. Has, then, our young woman retired into an inner world of her own? The suggestion appears to have support from another side: Dr, 10, the interest in the minor detail, is well above the level of the healthy; and even well above that of the average found in schizophrenics. But the psychogram as a whole says that this person is not schizophrenic. Citing the first paragraph of the Rorschach report, as given in the clinical record:

In her intellectual life, patient's grip on reality is just about within the range found in the healthy. But there is no break-down of intellectual control as seen in the fact that she maintains logical canons, retains intellectual conformity, reacts with a healthy number of the more common responses and functions intellectually at a very superior level as seen in her grasp of complex relationships. The occasional inaccuracy can be understood then as the effect of her personal needs in shaping her perceptions. Her feelings are so strong she frequently permits them to dominate her intellectual reactions. In other words, affects often control her rather than she her affects. Thus in the color figures we have almost no responses indicating intellectual conformity, while a great amount of fantasy activity comes out and much of this is autistic. Here, too, the accuracy breaks down more than in all the other seven figures. At the same time, more than half of all her responses are given in these color figures. We have, then, an individual whose inner life is very responsive to affect-producing stimuli, a very lively, fluid psyche. Some effort to control her feelings, to be in tune with the world this girl makes, but for the most part she reacts sensitively.

The many M, or fantasy, responses are then not the inner living of the schizophrenic. They are the raw psychic material of the creative artist. She has since confirmed the Rorschach by winning professional recognition in her music.

The second summary is for the response record of a young man, aged eighteen, a refugee, admitted to the Psychiatric Unit of the Hospital, after having been taken in charge by the Travelers Aid Society. Excerpts from the referral notes follow:

On the bus he became quite disturbed and insisted on removing his clothes; spoke disconnectedly, sometimes in one language and at times in another; was unable to tell where he had come from originally; had seen his father shot and held his father's head when he was dying; told of his mother being held in a concentration camp in England; about the cowboys he had seen in Texas and that he had more food while in Texas than he had had in all his life. When food was brought to him he put it all in his water glass and attempted to drink it. . . . In the railway station he picked up newspapers and fruit at the stand and threw them around the station. But he quietly accompanied the social worker to a taxicab and entered it.

THE RORSCHACH SUMMARY

R-29

W	4	M	1	II	3	F+%	24
D	17	M, CF+	1	IIId	9	A%	7.0
Dr	8	C	3	A	2	S	1
	—	CF—	1	An	7	P	2
	29	FY	2	Sex	6		
Z	11.5	F+	5	Bl	1		
Ap:	W (D) DrI	F—	16	Ab	1		
Or:	Irregular-confused		—		—		
			29		29		
		E/B	2/6.5				

Here only two M responses are found. If this response, in and of itself, is the sign of inner living, the patient should be healthier than the first, since he engages in so much less fantasy, less even than the average healthy person. But, quoting from the interpretation:

Intellectually patient's construction of his world is at an extremely low level, such as found in the mentally very sick and consistent with indications of a serious breakdown of the ego. Logical method tends towards confusion. The most common responses, *i.e.*, those indicative of intellectual conformity, are lacking.

The M (fantasy living) by itself does not then give the clue to what the patient does with it. The entire psychogram does. With F plus at 24 per cent, noticeably below that found even in the feeble-minded, the patient cannot be correcting his creations by

referral to reality. The pattern is consistent with indication of Bleuler's "dereistic" thinking. The content of the two M responses is itself index to the patient's special thought trends: (In Figure III) "Twins being born; there is where they are lying; and the innermost body of the woman is opened up."

The Rorschach conclusions were: "The findings as a whole follow pretty well those common in seriously disordered schizophrenics." The clinical diagnosis was schizophrenia; prognosis poor.

It is beyond the scope of the present paper to demonstrate interpretation. What is germane here is the dependence of the differences in Rorschach meanings on the differing whole response patterns. The fact is that the structure of the psychogram as a unit shapes and colors the individual trait operation. In our first patient, M is the musician's creative activity; in the second it is wish-satisfying invention. In the schizophrenic the CF, or color-form responses, are emotional instability; in the artist, they are sensitivity. So the principle works for all the Rorschach factors. This primacy of the whole individual, with variability in psychological significance of the trait, and the dynamic role of the whole in determining the character of the component—all this appears fundamental in Rorschach procedures. It is an hypothesis which explains the experience with the test. Support of this thesis derives further from another approach, the remarkable accuracy with which the Rorschach language can be traced in the findings of neuropathology; of psychoanalysis, particularly those of Freud; and of one school of experimental psychology, *i.e.*, *Gestalt*, chiefly in the work of Kurt Lewin.

JACKSON, FREUD, LEWIN

A mentally ill person, according to the Jacksonian interpretation, is not merely the well person *minus* certain behavior traits. He is in reality another personality. He "ceases to be his highest self, and at once or soon becomes his lower self" (15, 26). He is, after the epileptic fit, "in the strictest sense another person differing . . . from his anti-epileptic self" (*ibid.*). Translated into Rorschach terms, there is a new organization of personality, summarized by the new patterning of the symbols. This is illustrated by the psychogram of a second Rorschach, administered following

insulin-shock treatment to the schizophrenic patient above. This summary is:

R-10							
DW	1	M	1	Il	1	F+%	50
D	7	Cl-	1	Ild	3	A'' ₆	40
Dr	2	F+	4	A	3	S	0
	—	F-	4	Ad	1	P	2
	10		—	Sex	2		
Z	4.0		10		—		
Ap: D, Dr		EB	1/1		10		
Or: ?							

"The differences are striking:

	R	M	C total	F+	Z
I Rorschach	29	2	6.5	24	11.5
II Rorschach	10	1	1.0	50	4.0

"The patient now construes reality at a level markedly above that before treatment (F plus) but at a great cost to richness: affective experience (C), fantasy (M), grasp of complexities (Z), productivity (R)—all are significantly reduced. Other noteworthy changes are the increase in the percentage of the more common forms (A) to the level of the healthy, relatively less attention to the uncommon detail (Dr) with the distribution of interest as between this and the common detail (D) again more nearly as in the normal (Ap), and reduction of the sex content. The changes are all in the direction of better intellectual control; and all at the expense of pleasurable experience, *i.e.*, of the wish-satisfying fantasy (M), infantile affective abandon (C), and sex saturation of the mental content. The second psychogram, taken in and by itself, still is that of a schizophrenic, but of one much less sick than the first shows. There is, in a word, a different personality organization. It is merely the converse of Jackson's dissolution.

This Jacksonian principle can be seen operating in the Rorschach personality structures in all the clinical entities, and at all levels of development. Jackson says: "Illusions, hallucinations, delusions and extravagant conduct are the outcome of the activity of nervous elements untouched by any pathological process; they arise during activity on the lower level of evolution remaining" (15, 40). In Rorschach language here are the poor (inaccurate) form perceptions (F—), the bizarre relationships (Z) seen, the very uncommon details (Dr) detected, the illogical (DW) and illogical (Order)

method, the autistic living (M), immature or uncontrolled affect (C, CF), and the odd associational content—to mention only some of the findings—in patients with brain pathology, toxic psychoses, acute manic attacks, hebephrenia, *i.e.*, those who have been relieved of higher control. These Rorschach signs are “the positive mental symptoms,—survivals . . . on the lower, but then highest level, of evolution” (quoting Jackson again, 15, 46). Again, “all mental states, healthy or morbid, are the survival of then fittest states” (15, 24). So too a gradation in quantity of Rorschach factors and variation in personality can be seen all along the normals’ growth scale, from young childhood to maturity; and in the several clinical groups, whether due to accident or disease, as in Jackson’s patients, or to those retrogressions of personality that represent adaptive maladjustments.

These latter are more in the province of psychoanalysis, and the Freudian personality can equally well be seen through the Rorschach lenses. Thus when Freud says (9, 29) “the ego is that part of the id which has been modified by the direct influence of the external world,” he is essentially defining F plus, index to grip on reality. When he adds, “Moreover, the ego has the task of bringing the influence of the external world to bear upon the id and its tendencies, and endeavors to substitute the reality principle for the pleasure-principle which reigns supreme in the id” (9, 29–30), he is describing the balance of F plus and C—a balance found in favor of C in younger and in regressive conditions; and in favor of F plus, in the more mature and controlled individuals. “The ego represents what we call reason and sanity, in contrast to the id which contains the passions” (9, 30). Write “F plus” for “ego” and “C” for “id” and we have a statement of just what is found by the Rorschach experiment. The entire construct of the personality as drawn on page 29 of the *Ego and the Id* could in fact easily be kept, substituting only the appropriate Rorschach symbols. All this is true, even though we are as yet in *terra incognita* in applying Rorschach language to some Freudian concepts.

In neurosis, the Rorschach handwriting is readily traced in the Freudian dynamics. Thus, “the symptoms bind the psychic energy which otherwise would be discharged as anxiety, so that anxiety would be the fundamental phenomenon and the central problem of neurosis” (10, 111), which is exactly what happens to the

Rorschach responses in neurosis. The patient's psychic life is *bound*. It becomes impoverished. F plus remains good, to be sure; the patient is in contact with reality; sometimes too much so, F plus is too high—he is on guard and dares make no errors. The healthy individual has some inaccuracies; he takes chances. The neurotic's record further shows a jittery lack of smoothness: affect (C) unstable, fantasy (M) out of balance with the rest of the psychic life, power to grasp complexities (Z), and productivity (R) impaired; associational content overweighted with special trends (*e.g.*, aggressions, anatomy). He is unfree, bound. The neurotic will "react with anxiety at a later period than the appropriate one" (10, 108). He will carry with him as an adult the sense "of danger situations no longer current," *e.g.*, the anxiety appropriate when the teacher reprimanded him at age six. He is, to this extent, an adult at this younger structural level. And in the Rorschach, in neurotics, we find psychograms of adults with inadequate, immature streaks, as the excess of CF (undisciplined affectivity) over FC (mature emotional reactivity). In behavior he is a personality other than a well-controlled, mature adult; his Rorschach structure is that of another personality group.

The confluence of Jacksonian and Freudian thinking on personality is worked out by Grinker in two recent papers (11; 12). "A child sucking," he says, "is physically, neurologically and psychologically sucking. As the infant develops, similar dominance of neural activity and its concomitant psychic activity is present in newer stages but since these represent more mature states (physically, neurologically and psychologically), they not only add a new quality to the psychic life but hold the older ones in abeyance, to a degree depending upon constitutional and individual fixations, that is, grooving of these older reflex functions" (12, 770). Set this side by side with findings in the Rorschach experiment. Actual findings are that the younger the individual the more "pure color" responses (C) he gives; the more mature he is, the more pure form responses he produces (F plus). The one, C, is representative of infantile feeling; the other, F plus, ideally, is the purely intellectual reaction. In some responses, CF (color) is the dominant element, with F playing a role. Psychologically they indicate a beginning regard for the environment, with egocentric trends still stronger. FC, or form color, is that mature affectivity

in which the individual takes account of the world about him, but still can feel warmth towards it. The personality growth is thus from the all-feeling (infant) stage, C, to the all intellect (sic!) (mature adult), F plus, intellectual achievement. The growth which Grinker traces is then that which, independently, the Rorschach experiment finds in the several personality stages. When some persons produce too much C or CF for the rest of their Rorschach psychic structure, or insufficient F plus, then we have a breaking, or a less desirable personality. In Grinker's words, it is "the disintegration of the higher inhibiting functions (F plus) allowing the older, lower levels (C) to reassert themselves (regression)" (12, 770).

Again, in discussing *learning*, he says, "We must then modify our comparison of repression and inhibition and indicate that *both indicate a negative factor in that a certain level of activity is abandoned and a positive factor which results from or is permitted by the shift of activity from one portion of the nervous system to another*. In the evolutionary (phylogenetic) process and in biological learning (ontogenetic) the shift is upward. In the devolutionary process of disease, either functional or morphological, the shift is downward and is termed regressive" (12, 779; Grinker's italics). His language here pictures those progressions and regressions in personality organizations actually found by the Rorschach test in various stages of development or of disease; *i.e.*, in amount of F plus (controlled intellectual activity); Z (high mental process); C, CF, FC (relative amount of feeling expressed towards the world); and the balance in the whole personality of these against one another or against the imaginative life (M). Another line of evidence is the shifts in Rorschach personality structures (the psychograms) that have been observed in the same individual. These shifts always go with change in clinical picture; as, *e.g.*, following shock treatment, or in the remissions and swings of a manic-depressive cycle. "It is amazing how this psychological explanation coincides dynamically with the neurological," says Grinker. And how easily it can be written in Rorschach symbols.

The *experimental* bed in which the Rorschach test lies most comfortably is that of Gestalt (Beck, 2). In personality study as such, the Gestalt position receives its boldest development in Kurt Lewin's work, and his topological psychology, with the accent on

field forces; and the larger whole as the dynamism, determining the individual's behavior. Though the actual approach is different, the underlying orientation essentially corresponds to the Freudian, in that psychological activity is seen as an interaction, a unit field, consisting of the individual (including, as I understand Lewin, all that individual's history) and environment. Succinctly, his standpoint is, "In summary, to understand or predict the psychological behavior (B) one has to determine for every kind of psychological event (actions, emotions, expressions, etc.) the momentary whole situation, that is, the momentary structure and the state of the person (P) and of the psychological environment (E). $B=f(PE)$. Every fact that exists psychobiologically must have a position in this field and only facts that have such a position have dynamic effects (are causes of events). The environment is for all of its properties (directions, distances, etc.) to be defined not physically but *psychobiologically*, that is, according to its quasi-physical, quasi-social and quasi-mental structure" (18, 79; his italics). Again, in Rorschach language, the whole personality structure as represented in the response summary is a product of all that has gone before (including native abilities) to produce that personality. It is the balance of psychological processes represented in M, C, F, Z, etc., and the individual's personal or character trends; or that part of his environment which he has introjected, as seen in the content of the Rorschach associations (although, to be sure, the findings which the experiment yields on this latter point vary greatly; only vestigial in some instances, fairly complete in others). In another place Lewin joins personality and environment even more inextricably: "In this equation P and E are not independent variables. The *structure of the environment* and the constellation of forces in it *vary with the* desires and needs, or in general with the *state of the person*" (19, 166; my italics). The concept of dynamic stresses (the Rorschach test's C, Z, M, etc.) between the individual and his world (whole Rorschach personality pattern, or equilibrium, more especially in relation to F plus, or reality testing), with the psychological event, *i.e.*, healthy behavior or symptom (the separate Rorschach findings, normal or deviating) seen as the resultant of all the stresses (C, M, F, etc.) conceived of as one unit whole (the entire Rorschach personality structure)—this is Lewin's concept.

The Rorschach test is thus an instrument which cuts across the personality at the Jacksonian level, at the Freudian level, and at Lewin's topological level. Each of these cross-sections reveals the same findings, although their terms differ, which is logically to be expected since they are studying the same personality. It is their vantage points that differ. What the Rorschach test contributes peculiarly its own is (a) the sureness and control which inheres in a single, concrete instrument, (b) the emphasis from a new quarter on the personality as a structural unit, and (c) support to the hypothesis that the personality trait analyzed out is a function of the whole personality—something the individual does. Being more than its component functions, and being a dynamic organization of them, the whole personality is also something different from these traits that can be analyzed out. A point that Bills develops in another context helps us here: “. . . it is perfectly possible to assume the emergence, at the organic level, of a more complex stage of organization accompanied by the manifestation of somewhat novel properties, without assuming any break in the natural series” (5). This is what we appear to have in the Rorschach whole personality: a more complex organization, multi-dimensional, of the several psychological activities, each of which influences all the others, and is in turn influenced by all—an interaction of forces issuing in that phenomenon we call the human personality and having its novel properties.

Speculatively we may take advantage here of a line of reasoning followed by Bridgman (6, 220). After denying the proposition that aggregates of things do not acquire properties by virtue of their number which they do not already possess as individuals, he goes to mathematics for a parallel. The individuals in a system which can be described through a linear equation have the property of additivity: the effects of a number of them are the sum of the effects, and they have no new properties. But in combination terms, which contain the square of the field (e.g., electrical energy), the sum is more than (different from) that for all the parts; new effects are found in the aggregate.

The Rorschach personality pattern—it seems safe to proceed on this theory—is a combination term. Such forces as those represented by M, fantasy living; C, affective experience; Z, organizing of complex wholes; F plus, reality testing—all of which are in one

general field, and we shall not enumerate here the other Rorschach factors—influence one another so that the net result is as the square of the field—that dynamic, obdurate, unpredictable activity we call the human personality.

In conclusion, the personality structure revealed by the Rorschach test can be seen to correspond to that found by certain other methods. These methods, therefore, offer to the Rorschach student his validating concepts as well as checks for the personality as a whole. One implication is, therefore, that for the sake of the test's scientific validation the Rorschach student needs to pursue his investigations in a setting where his subjects will be studied also by one, two, or three of these other methods. Thus his findings in regard to any personality as a whole will be validated. Meanwhile, as a psychologist, by which I mean experimentalist, he will exercise over the component techniques of the test those cautions and controls and canons of orderly method which his scientific upbringing has ingrained in him. He will constantly criticize and refine them. In this way his test will be stably founded. Or at least he will know how much of it can be so founded. That which is not, does not matter—it will go with the wind in any event. But, so controlled, the method can be scientific; as a whole it can be no stronger than its weakest part.

SUMMARY

Using the term "error" in its root sense of a "wandering about," Rorschach test procedures are liable to errors on several grounds: (a) Need of definitions. Neither the personality as a whole nor the component factors are being validated by stable frames of reference. Operational criteria are suggested. (b) Inadequate clinical experience by Rorschach investigators. This experience is essential for the understanding of the psychology of the several personality groups studied by the test; hence it is a *sine qua non* for understanding the psychological meaning of Rorschach test findings. (c) Failure to control by the usual scientific techniques the method for identifying the separate Rorschach factors (denoted by the symbols of the Rorschach language) out of which the entire personality structure is patterned. (d) Halo, which results from the examiner's direct contact with the subject whom he is examining.

The variability of separate Rorschach factors (or personality

traits), depending on the entire personality pattern, is discussed and illustrated. It is indicated that Rorschach findings for any one individual can be restated in the neurological concepts of Jackson, the psychological concepts of Freud, or the topological concepts of Lewin. These three systems of thought, therefore, offer validating approaches for the personality as a whole as revealed by the Rorschach test. The Rorschach investigator must, however, subject his separate factors to the necessary controls so that he will be able to solidify the scientific foundations of the test.

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THE TECHNIQUE OF DREAM ANALYSIS

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SINCE Freud first called the dream "the royal road" into the unconscious, dream analysis has become a widely used method in psychotherapy.¹ Also those psychiatrists who do not profess to be members of any one of the analytical schools, but who employ psychotherapy on an eclectic basis, have come to favor the use of dream analysis as one of the most promising of analytical procedures.

In spite of the extensive literature which has been accumulated on this subject, the practical application of dream analysis is still far from being on a sound scientific basis, and the divergent views of the various analytical schools are evidence of the great importance of the subjective factors involved in this method. As a result individuals who have been treated analytically by adherents of different analytical schools generally show typical differences even in the raw material of their dreams (*e.g.*, prevalence of sexual experiences in psychoanalytical treatment, frequency of archaic and fantastic symbols in treatment by a Jung follower). The influence of the dream analyst thus may concern not only the interpretation but even the formation of the dream material. Furthermore, the arbitrariness of interpretation is increased by the inclination of some dream analysts to make frequent use of standard interpretations of various symbols. The resulting analysis, therefore, often resembles more the rationalizations of the analyst than the actual meaning of the dream. One who has started to study the literature may justifiably become all the more bewildered as he does not find much practical advice in any textbook from that of Freud to the most recent publication of Ella Freeman Sharpe² as how actually to apply his knowledge of the various dream mechanisms in the practice of dream analysis.

It is the purpose of this study to demonstrate a certain procedure of dream analysis which attempts to avoid dogmatic prejudice and

¹ Freud, S. *Die Traumdeutung*. Leipzig and Vienna: Deuticke, 1911.

² Sharpe, E. Freeman. *Dream analysis*. New York: Norton, n.d.

arbitrariness. Our only presupposition is that dream experiences represent mental activity on a "lower" and therefore more concrete level; e.g., instead of the prevalence of abstract thought, the experiences in dreams are mostly re-translated into the corresponding images. We leave it to the dream itself to indicate whether it expresses a wish fulfillment or other tendencies such as fear, introspection, attempts at problem solution, etc. Because of the complexity of the personality-structure it may be expected that the various levels of life experience, of which sex is one important aspect, will be represented in the dream material. Needless to say, this paper is not offered as a substitute for the intensive study of the theories of dreams and of dream mechanisms. It is taken for granted that this knowledge has already been acquired by the reader.

Following Jung's early statement,⁸ it is our conviction that no dream analysis ought to be undertaken without the analyst's having acquired an extensive knowledge of the dreamer's conscious personality and previous experiences. As will be demonstrated later, every dream image includes so much ambiguousness and is so complex that it can be clearly focussed only if it is projected on a well-known background of the conscious personality.

In starting out on a dream analysis, it is basically important for the analyst to assume the following attitude: The dream should be *interpreted* as little as possible, it should be *read*. The concept of interpretation involves the active participation of the searching mind which approaches the dream and the free associations offered with recall of experiences and logical activity. It is, however, desirable that the dream analyst completely discard his own intellectual activity and merely *accept* those experiences which the dream itself has to offer. It may be recalled that the language of the dream is not that used by the conscious mind in our civilization. As opposed to the abstract language of the latter, the dreaming mind turns to a more primitive level of expression. Whoever wants to understand the meaning of the dream would have to understand its language. This, however, is something for which we have been badly prepared by our intellectual training in spite of all our acquired knowledge of the dream mechanisms. The more logical-abstract training we have received, the farther away we have been carried from understanding the picturesque concretism of the dream language. Never-

⁸ Jung, C. G. *Psychology of the unconscious*. New York: Dodd, Mead, 1925.

theless, some knowledge of it is common to all of us because we are able to express ourselves in exactly the same way when sleep switches off our daytime consciousness. Our dreaming mind speaks the universal language of all dreams. Still when our daytime consciousness returns, we have again lost our knowledge and do not know what to make of the dream that is presented to us. The problem arises how the mind that is fully awake may learn to abolish the daytime attitude and to adapt itself to the other level. How this is actually accomplished can best be demonstrated by comparing the desired attitude with a related one which is well known to most of us. Anybody who becomes absorbed in a lyrical poem reads it the way a dream ought to be read. The following verse by Rainer Maria Rilke appears particularly suited to exemplify the type of expressionistic lyric that is here referred to:

Mirrors: at last to reveal in rhyme
the life that you really live!
You strange interstices of time,
as full of holes as a sieve.

Squandering the room you are left to keep,
wide as forests when twilight broods . . .
And the sixteen pointed lustre's leap
through your virginal solitudes!

Sometimes you're full of portraiture:
welcoming some to your last recesses,
diverting others, shy and demure.

But the fairest will always remain inside
till through the cheeks you are holding presses
Narcissus, released and clarified.⁴

Anybody who approaches this verse—one might say wide-awake, with critically examining intellect—the way he would read a report of a scientific or industrial enterprise would take offense at nearly every word, surely every single sentence. He would be disgusted at the want of clearness and of completeness, and he would stress the lack of logical meaning in the whole product. The reaction is different in one who allows himself to be captivated by the beautiful words, and to experience without any active expectation the emergence of images of various intensities. All of these are held together by the same sentiment, diverse variations of this one experience: mirror. Only then, when all considerations of a physical or

⁴ Rilke, R. M. *Sonnets to Orpheus*: Second Part. (Trans. by J. B. Leishman.) London: Hogarth Press, 1936, p. 95.

other conceptual type have been discarded and one devotes himself passively to the experience of this most unsubstantial structure which can be so rich in its reflection of life, do the words formed by the poet attain symbolic meaning and significance. Furthermore, the emerging images realize the experience of the mirror more essentially than could have been done by any sagacious considerations and deductions. Incidentally, it does not matter that the associations evoked by the images of the poem are different ones from individual to individual because of the variation of cultural backgrounds and past experiences. Although expressed in a different language, the basic resonance—presupposing that any resonance at all exists—will be the same: experience of a mirror.

It is the withdrawal of the purely rational attitude which characterizes the one who is captivated by a lyrical poem as it *should* characterize the attitude of the one who is attempting to read a dream. Only by this means is it possible to enter the world of poems and dreams which remains a multitude of logically unconnected colorful pictures. The individual phenomena are not so stable and delimited from each other as those experienced in the light of day. There is a lack of steadiness also. Everything flows and passes by; there is a mysterious ambiguity about everything. A single image usually refers to multiple sources instead of one single motive. What otherwise is separated here flows together. Instead of something actually intended, frequently something only distantly related to it is advanced. If one, however, refuses to be perplexed by the chameleon-like nature of the dream manifestations, and is prepared to *perceive* only, one may realize the harmony in the apparent confusion. One objection to the demonstrated point of view may be anticipated. Some readers would state that a poem like the one above does not evoke any response in them but that of negation. This type of personality, however, will also be unable to descend to the level of the dream language and to accept what the dream actually offers instead of consciously searching for a meaning which cannot be grasped in a foreign tongue. He will therefore not fulfill what in our conviction is the basic requirement of a sound dream analysis: to *read* the dream instead of *interpreting* it.

It is essential first to perceive the dream which one wants to analyze with relaxed attention. As somebody once remarked with

regard to neurotic manifestations in general, it is better to behold something through the half-closed lids as one does in the dusk in order to see more clearly. This, I should think, holds true particularly for the perception of dream images, emerging from the dusk of the subconscious. One must float along with the stream of images passing by, quite contemplatively, and without the sterile ambition immediately to rationalize the vision. Patience has to be acquired, enabling us to wait passively and to submit to the inspirations which emerge spontaneously from the corresponding levels of our own mind and to accept everything. While some pictures then advance and others recede, we gradually obtain the essential substance of the multitude of motion and formation which the dream presents. Here we can recognize the regulating principle of our own subconscious. Its productivity proves itself in selecting as well as in omitting—as it is the mark of a good novel to illuminate only those features in the life of its hero which are somehow essential and of importance for the story as a whole.

It is important to go over the dream (which we should have in writing before us) time and again. It is like trying to play a new passage on the piano. First we have to get accustomed to the notes and the sound pictures. The more frequently this is repeated, the more new harmonies and relations are discovered, the same as new meanings are found on re-reading a book which we believed we had already made completely our own. In other words, our first task is to become thoroughly acquainted with the dream which we intend to analyze.

The next step is to have the dream, which as yet is far from being a finished product, completed by the dreamer himself. While being exposed to the write-up of the dream we usually feel the same slight uneasiness which we experience when reading a book from which some pages are missing. It is therefore necessary to regain the missing parts of the dream in order to have a complete product with which to start. Many lines in the pictures offered are not yet drawn out and some colors are missing. Parts of the dream may be quite pale and vague. The better we have already learned to behold the dream on the picture-book level, the better we can actually visualize which parts lack completeness. We are not satisfied with the dreamer's vague description of a dream figure which is only dimly recognized. We want a distinct picture of

every person as well as of the inanimate surroundings. Needless to say, in completing the dream according to our request, the dreamer frequently offers free associations, which, although not actually part of the dream, form the missing link between the original trend and its disguised expression in the dream picture.

When thus completed, the dream with its periphery of related pictures, gained by the supplementing associations of the dreamer, will always give us a certain impression of *atmosphere* and of *topic*. If we do not look for details at first sight but let ourselves be captivated by the whole composition, there will usually be no doubt whether we are confronted with a more dramatic or more lyrical product, whether the expression is a defying or affirmative one, whether it offers a positive solution or a doubt or a question mark. It also will be already indicated which topic of life and which levels of the personality are involved.

In a number of dreams of simple structure the images are so expressive and transparent that they force their meaning upon us, *i.e.*, they can immediately be read. In others we will have to wait for more material from the free associations of the dreamer which will connect the separate parts of the picture into a meaningful whole. Our picture-book attitude will help us to select the starting-point for free associations. Those images will impress us as particularly striking which seem to contrast either other parts of the whole dream picture or the dim vision of the conscious personality of the dreamer which is always vaguely present in the background. The more the material is supplemented by free associations, the more new images will emerge if we maintain the picture-book attitude. Practically it will not always be necessary to continue working through the material until the whole dream in all its details can be read; occasionally the free associations starting off from a striking point of the dream will take the lead and offer so much revealing material that there is no need of further pursuit of the original dream content. In our opinion it is furthermore often superfluous and much too time-consuming to enter into every detail of the dream picture. If we do we might become endangered by our attempts to relate so many mosaic stones to each other that we miss the view of the whole picture. Just as some paintings impress us by their general composition, while others are striking because of the minuteness with which every detail is endowed, the

significance of the dream varies in individual instances. We leave it to the dream itself to tell us whether we should be more interested in all of its details or in its general structure. Passivity on our side is always the basic command because we are not trying to interpret but to read the dream.

The following dream analysis may demonstrate what we have tried to point out so far.

The dreamer was being treated for psychogenic impotence. The material so far collected emphasized the ambivalence of the patient towards the sex problem. It was evident from previous discussions that he strictly discriminated between "sensual" and "spiritual" love. This patient, who formerly had had successful sexual relations, had asked for treatment because of inability to establish relations with his wife, to whom he had been married for several months.

THE DREAM

"I took a stroll through a rose garden; it was a beautiful morning. Although the rose bushes were in full bloom, the ground was densely covered with rose petals. While walking I shuffled through the rose petals like children often do through dry leaves."

Since the scenery definitely contrasted with the patient's condition at the time, it was taken as a starting-point to supplement the dream. The analyst's questions are put in parentheses.

(What about the rose garden?) "I am thinking of King Laurin's rose garden in the fairy-tale. It was somehow beautiful, making you feel happy." (How was that about Laurin?) "I don't recall it exactly myself. It was something about a prince who rescued a princess who was held by Laurin, King of the Dwarfs. As far as I recall he rides into the garden from a gate in the hedge and gets the princess." (What was particularly striking?) "That the roses were all still in full bloom although the ground was covered with rose petals. These were also all still quite fresh, and one did not observe that the roses on the bushes were withered."

So far we have the dream and the associations with which the dreamer has supplemented it. In this dream it impresses us indeed as most remarkable that the ground is covered with fresh rose petals so that one would assume that the roses on the bushes would be withered and without petals. This, however, is not the case. While glancing at these contrasting images, we also dimly visualize in the background of our consciousness the actual situation of the dreamer. There is something in the atmosphere of the dream

which tends to establish some connection between these two spheres: the dream and the situation of the dreamer.

Instead of attempting to grasp the melody by trying out various combinations of notes, we let our fingers—figuratively speaking—wander playfully. We then wait until some chords compel us to listen. The following associations may wander through our mind: rose garden . . . petals on the ground . . . plucking of flowers . . . beautiful, making you feel happy . . . to free the princess . . . sleeping beauty . . . garden of love . . . invading through the hedge. . . .

The whole atmosphere is so striking that there can be no doubt about the topic of this dream, which evokes many associations of similar fairy-tales: the freeing of the princess, who is being held behind a dense hedge. At the same time we are aware of the surprising fact that the dreamer, who suffers intensely from his sexual difficulties, speaks of this dream as being particularly beautiful and gladdening. Thus far, by merely listening to the harmony of the various tones we have perceived the general topic of the dream—the man's winning of the woman. There also can be no doubt as to how this theme is elaborated on. The dream is "beautiful and gladdening," the patient takes a stroll on a "marvellous morning," this same man who, because of his difficulty, has been anything but exuberant. This dream therefore definitely does not express resistance of a neurotic ambivalence toward Eros, but it reveals some knowledge of a positive solution of which the consciousness is not yet aware. This unawareness of the consciousness is confirmed by the surprise of the dreamer who wonders that the roses are still in bloom in spite of the profusion of petals on the ground. Incidentally this picture of the rose garden, which is in such contrast with the possibilities of reality, is so impressive that we expect to find here the solution of the problem.

Provided the dream has not yet spoken to us we start anew, aimlessly to behold the collection of images which have been offered so far: . . . rose petals . . . on the ground . . . shuffle through them . . . stripping off the petals . . . plucking the roses . . . winning the woman . . . like a boy in dry leaves . . . with your feet . . . to depreciate . . . to treat contemptuously . . . plucking the roses . . . leaves falling to the ground like dry leaves in

autumn . . . which one steps on with one's feet . . . but the rose bushes in full bloom. . . .

The pictures emerging from this chain of associations are so expressive that we cannot help translating them into our abstract every-day language: even if the roses lose so many petals that the entire ground is covered with them, they still remain the same beautiful and gladdening rose bushes in bloom. And now we feel that we have already come close to the meaning of this dream.

A new chord will be formed by the addition of that knowledge about the patient which is always present in the periphery of our consciousness: . . . pluck the rose . . . leaves on the ground . . . shuffle with your feet . . . the sensual and the spiritual love . . . desecration through sexual approach . . . plucking of the rose . . . the lower life . . . pulling down to the lower level . . . with your feet. . . .

Glancing at the various series of images we have gone through, we recognize the complete melody: You are afraid of plucking the rose. Even if the rose, however, is stripped of her petals, and these are lying around on the ground where you think you tread them with your feet, the rose will continue to bloom in full beauty. The experience of love will not have suffered! One could not formulate the meaning of this dream more precisely than the dreamer himself did spontaneously after having given the first supplementing associations: "Sexual intercourse does not degrade the woman."

In this case the complete procedure of the dream analysis which was demonstrated was actually not carried out because the meaning of the dream forced itself upon the dreamer as an inspiration. However, whether the whole procedure of dream analysis has to be run through, or whether the meaning of the dream reveals itself after the first reading, the general attitude taken by both the analyst and the dreamer remains the same.

In our example the following reaction of the patient proved the importance of the dream. Although the patient himself had been able to read it he at first did not understand its subjective significance. He even appeared a little indignant, stating that the dream revealed only something which was self-evident. He added that he himself had no objections to sexual relations and that a married woman naturally could not be degraded through intercourse. The writer, however, felt justified in telling the patient that he thought

it highly improbable that this dream should only confirm the patient's own previous attitude, all the less as he then would not have had any reason for the elation and surprise which had accompanied the dream. The patient started protesting energetically, then suddenly hesitated. His expression became that of incredulous surprise. He said quite excitedly he had even yesterday questioned whether his wife and he could look each other straight in the face after having had sexual relations. The recollection of this thought had come to him this very moment.

As the reaction of this patient shows, the analysis of dreams is complicated by its double purpose: First, it helps the therapist to recognize the actual conflict situation or the particular life problem of the analysand. Secondly, it enables the patient to take conscious possession of his repressed conflicts against the power of his own resistance. While the experienced dream analyst will frequently read the meaning of his patient's dreams after a brief approach, the therapeutic task is thus not yet solved. Should the analyst be satisfied with telling the patient the meaning of his dreams he will experience a therapeutic disappointment. The patient may intellectually accept the analyst's opinion; his behavior, however, will soon prove that he has accepted it only on the intellectual level. His resistance is not really overcome, at the core his personality has not been convinced. The information will therefore have no lasting effect. For this reason the patient—at least in the ideal case—should be prompted far enough and the material worked through long enough that the patient volunteers the complete reading of the dream. Naturally this will take much more time and a much longer procedure than if the therapist alone were concerned. The patient's resistance is a great restraining factor which can be overcome only by sufficient patience on the part of the analyst. If he is persistent enough and the resistance "feels" that even further evasion will not achieve the purpose of escape, it will give in. One of the great advantages of dream analysis as an analytical method is that the patient himself is able to behold over and over again images which have emerged from his own subconscious mind and which have become objectivated by writing them down. He thereby acquires a weapon against his own resistance.

While the analyst should remain as passive as possible in the

matter of reading the dream content, he naturally ought to take the lead in guiding the dreamer from vague and peripheral perception to the clear understanding of the nucleus of the dream. It has already been mentioned that the images themselves, by means of incompleteness, discrepancies, etc., lead the way to a fair degree. In addition, the reaction of the analysand is of supplementary importance. Certain expressive features, signs of uneasiness, inappropriate smiles, etc., will usually show when the center of the disturbance is being approached. The procedure of the analyst may actually suggest somebody playing the game "search for the button." The exclamations of the group are here replaced by the expressive reactions of the dreamer towards the penetration of the defense system built by his resistance. The behavior of the analysand, therefore, has to be carefully watched during the entire dream analysis.

Finally the question arises whether there are any sound criteria to prove the correctness of the reading of the dream. In our opinion every meaning emerging in the way of inspiration and without any searching attempts should be accepted as correct. It appears in the passive manner of free associations and therefore may be expected to have some close relation to the dream as well as to the underlying problem. Every meaning, furthermore, that becomes *evident* should be accepted provided that the evidence is shared by both parties. In those instances, however, in which the therapist suggests a meaning that is evident to him, special attention should be paid to the genuineness of the analysand's consent. One has never to forget that the resistance likes to make use of all kinds of masks; one of these is the apparent acceptance of the analyst's opinion which, however, is not permitted to become actually assimilated. A distinct feeling for the differences between genuine and non-genuine acceptance, therefore, is of basic importance. Particular proof of the correctness of a dream reading is the simultaneous appearance of the same associations in analyst and analysand. There are such indefinite possibilities of associations to the complex formation of a dream that mere coincidence can be completely excluded.

If in analyzing a dream any one of the three criteria mentioned is fulfilled, it is not too much to hope that the dream has not merely been interpreted but actually read.

SHORT ARTICLES AND NOTES

TRAINING IN DEMOCRATIC LEADERSHIP *

BY ALEX BAVELAS AND KURT LEWIN

University of Iowa

THIS is a preliminary report about a rapid retraining of mediocre leaders into efficient democratic leaders.¹

Good leadership is recognized as one of the outstanding conditions in any field of group life or cooperative endeavor. Large organizations, such as the W.P.A., Boy Scouts, Y.M.C.A., school systems, factory organizations, all require leadership for the organization as a whole (head-leader), and leadership for the smaller groups which actually make up the body of that organization (sub-leader). We shall speak here of the latter type of leadership, although we believe that the former does not present fundamentally different problems.

In regard to the head-leader, it is essential for an organization to get the best person available. In regard to the hundreds of sub-leaders working in a large organization it is one of the major considerations to eliminate the inefficiency caused by the poorer leaders because they account for a disproportionate amount of the trouble and avoidable expense.

Poor leadership can be eliminated either by careful selection and, if necessary, dismissal of personnel, or by training. The difficulty of predicting leadership ability is known to be great. Dismissal involves much waste and expense. In recognition of this situation, training of leaders has been widely attempted. However, frequently it has not been very satisfactory. Also, there is no actual scientific knowledge about either the percentage of poor leaders that can be improved by training or how far the improvement can go.

I. EXPERIMENTAL SET-UP

As a first step in studying scientifically the possibilities of leader retraining, the following experiment tried to test under controlled conditions the efficiency of certain training methods for a particular field: recreation. The leaders were picked so that their age and habits of long standing should present particularly difficult cases for retraining.

The experiment was conducted in a summer "Home Camp" (at the Jewish Community Center, a non-sectarian service) whose children (mainly lower middle-class) were free to attend from day to day. Among the W.P.A. recreation leaders who worked on this project, six were selected by their supervisors as definitely unsatisfactory—four women leading handcraft classes and two men leading outdoor games. They were between thirty-five and forty-five years of age, and had been doing recreational work on the W.P.A. for an average of three years.

The experiment proceeded in the following manner: (1) All leaders were tested by observing and quantitatively recording their actual behavior "on the job." This

* A cooperative study of the Child Welfare Research Station, University of Iowa, the W.P.A. of the State of Iowa, and the Jewish Community Center, Des Moines.

¹ For a more detailed account, see Bavelas, A. *Morale and leadership training. In Yearbook of the Society for the psychological study of social issues.* (In press.)

included the way they dealt with the children and the resulting behavior of the children. (2) The subjects were divided into a "training group" and a "control group" which was not trained. Each leader in the training group had his counterpart in the control group. (3) The "training group" was then trained for three weeks (twelve days) for not more than two hours on each day. During these three weeks, both the training and the control group continued their work at the recreation center. (4) At the fourth week, both the trained and the non-trained leaders were tested again "on the job" by the same methods as at the beginning of the experiment.

II. RESULTS

A. The Leaders' Behavior before Training

1. *Behavior with children.* The treatment of the children was not unfriendly and sometimes the leaders showed a measure of personal involvement. Every leader was relatively well-trained in his particular field—flower making, clay modeling, playground games.

Figures 1a and 2a present the quantitative data about the way the leader controlled the children.

Leaders A and B (Figure 1a), who did playground work, controlled the children predominantly (60 per cent) by direct "leader-initiated commands." The somewhat milder form of direct control which consisted of giving commands after having

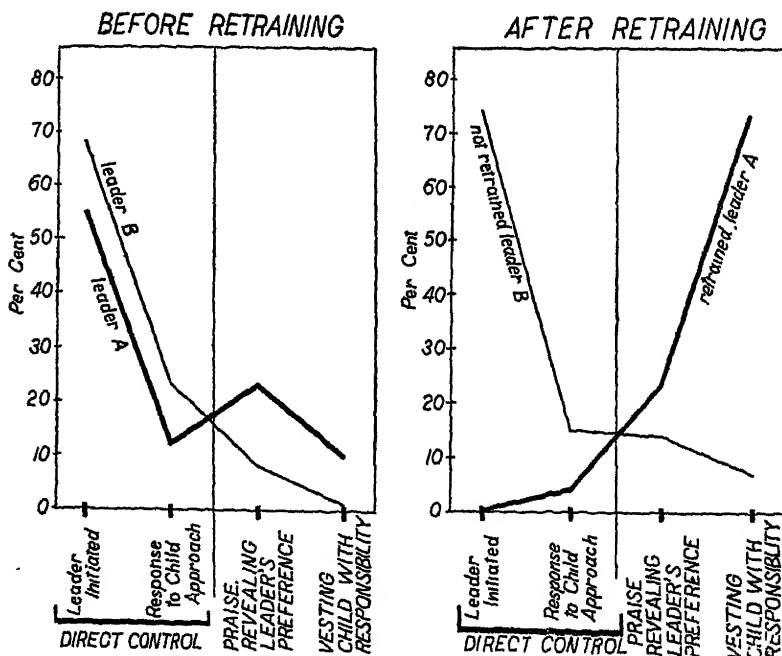


FIG. 1A

FIG. 1B

RETRAINING OF LEADER A

The frequency with which leader A uses authoritarian methods of direct control drops as a result of retraining from 77 per cent to 4 per cent. Instead, he uses a democratic, initiative-stimulating method, the frequency of which has risen to 73 per cent

been "approached by the child" occurred relatively infrequently (16 per cent). Less dominating and more evocative than these two "direct" methods of control is the guiding of the child by praising certain behavior or by making the leaders' own preferences known. A and B used this method seldom (12 per cent). The democratic, initiative-stimulating method of placing the responsibility of a "wise" choice in the children themselves was practically never used (5 per cent).

In summary, before training, leaders A and B used the authoritarian methods of direct control in about 80 per cent of their action.

The leaders C and D show a similar predominance (66 per cent) of "direct" methods of control (Figure 2a).

Having to do with handcraft rather than with the traditionally "tougher" playground activities, they used mainly the somewhat milder authoritarian form of giving commands after they were approached. Directing the group by praise and by vesting the children with responsibility occurred in 12 per cent and 22 per cent respectively.

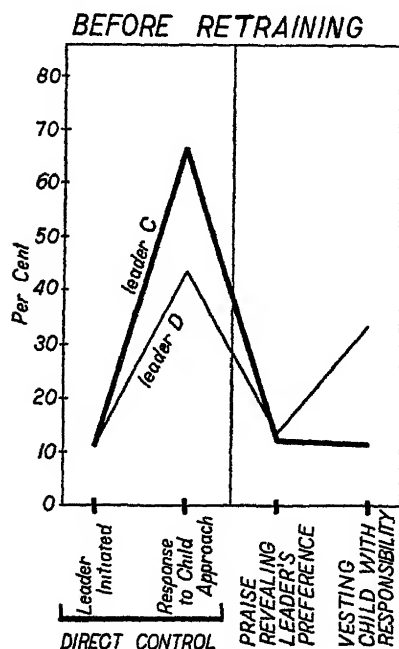


FIG. 2A

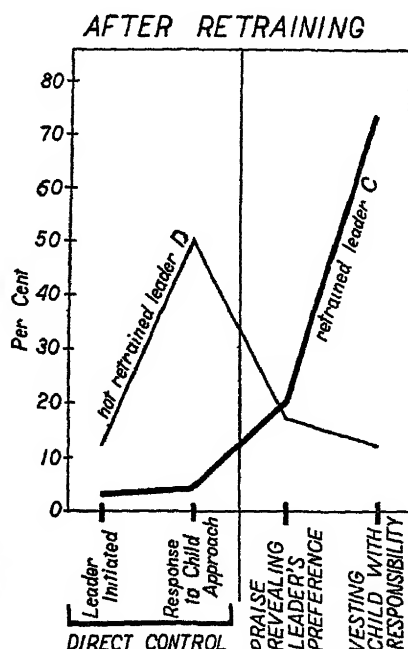


FIG. 2B

RETRAINING OF LEADER C

The frequency with which leader C uses authoritarian method of direct control drops as a result of retraining from 77 per cent to 7 per cent. Instead, he uses a democratic, initiative-stimulating method, the frequency of which rises to 73 per cent.

The lack of democratic techniques was apparent also in the *methods of teaching* the craft or game (our film record of leader and group shows this clearly). The leader saw to it that every child had to follow the same uniform pattern of work. The productions of the children were supervised in minute steps. When a child did not succeed, the leader would help him, usually by doing the operation himself.

2. *Morale of the leaders.* There was every indication that the morale of the leaders was low. In fact, most of them disliked their work, felt very insecure, and were suspicious of the organization. They openly stated that for everyone they knew this work was drudgery to be done just well enough to keep the job. The facial expression and bodily postures of these leaders while they worked indicated a mixture of apathy, worry, and unhappiness (see films).

B. The Leaders' Behavior after Training

1. *Behavior with children.* Figure 1b shows the *methods of control* used by leaders A and B at the end of the experiment. Leader A had three weeks retraining, leader B had no retraining. B's methods have not changed or have become a bit worse. The frequency with which the retrained leader A uses authoritarian direct control methods has dropped from 77 per cent before training to 4 per cent after training. Instead, he uses a democratic initiative-stimulating method (73 per cent).

A similar shift occurred in the retrained leader C as compared with the non-trained leader D (Figure 2b). D's methods have not changed or have become a bit worse. The frequency with which the retrained leader C uses direct commands has dropped from 77 per cent before training to 7 per cent after training. Instead, he uses an initiative-stimulating method (73 per cent).

The *teaching methods* of the non-retrained leaders did not show any indication of change. The retrained leaders shifted from "class-room" techniques characterized by dependence of the children and by uniformity of procedure to "group methods" which created productivity and cooperation. The success of these group methods was evident in (a) a doubling of the number of children attracted to participation, (b) the enthusiasm and persistence of the group, (c) the efficiency of work organization, (d) the high degree of self-discipline, and (e) the quality and output of the work.

2. *Morale of the leaders.* One of the most salient results of the retraining was the change from a definitely low to a definitely high morale. Leaders who had never been observed to smile at their work "loosened up" after the first week. After three weeks, the "drudgery" has turned into a meaningful and challenging job whose values for the child and for society at large were keenly felt. There was striking evidence of initiative in trying to find non-relief work and a readiness to tackle major difficulties.

The change to an all-round high morale of the leaders was reflected in similar changes of morale among the children. The recreational activities which previously were seen merely as a source of individual pleasure became transformed by the children themselves into worthwhile, socially oriented, and long-range projects. The scope of the group's activities and the efficient self-organization of the clubs far surpassed the levels achieved under the previous circumstances.

III. METHODS OF RETRAINING THE LEADERS

In essence, the method of retraining was a combination of changing the attitudes of the leaders and changing their techniques. Neither alone would have sufficed. These changes were achieved by a type of "clinic-on-the-job," and by applying genuinely democratic methods to the procedure of training.

We did not attempt to bring about these changes by "talks" about democracy, since every one of the trainees had previously gone through a standard training procedure and was accustomed to "talk" about recreational methods in democratic lingo. A first step was to make the trainees more sensitive to the multitude of

ways in which a leader can meet the various social situations. This was done by observing many leaders—good and poor, by observing each other, by observing the trainer himself, and by studying films from experiments about democratic, autocratic, and laissez-faire types of leadership. This led to an amplification of the objectives of recreational work. The various unrelated and vague goals (such as teaching skills, providing fun for the children, keeping discipline) became connected and part of a more far-reaching and, at the same time, more concrete goal. In the light of this new, organized goal system, the techniques became integrated among themselves and with the underlying attitudes.

Three points added greatly to the success of the training: (1) In spite of the new and added responsibility inherent in democratic leadership, the trainees felt keenly their own greater calm and poise, after they discovered that group discipline no longer depended upon their constant vigilance. (2) The trainees felt quickly the good effect which the turn toward democratic group methods had on the children. (3) The general belief of the trainees in the democratic procedures was strengthened by their own experience as members of the thoroughly democratic training group.

This first experiment is now being followed up by the training of people who will go out to train or retrain W.P.A. leaders in various fields. This will permit the testing of the efficiency of these training methods on a broad scale.

A PROJECTIVE APPROACH TO PERSONALITY PATTERNS DURING INSULIN-SHOCK AND METRAZOL- CONVULSIVE THERAPY

BY GEORGE W. KISKER

Columbus State Hospital

RECENT advances in the pharmacological therapy of functional mental disorders have opened new vistas for research into the psychological concomitants of the method. Not since the work of Wagner Von Jauregg have such far-reaching developments occurred in psychiatry as have been brought about by the insulin-shock therapy of Sakel and the irritative metrazol-convulsive therapy of Von Meduna. While pharmacological therapy fundamentally involves physiological and biochemical modifications which are only vaguely understood, there is the problem of explaining behavioral and personality changes which take place on a molar, or macroscopic, level as well as the physical alterations occurring on the molecular level. It is obvious that the solution of the latter problem must be left to the neuro-physiologist and the neuro-cytologist, while the explanation of behavioral modifications must be sought in terms of the psychosoma and underlying psychobiological dynamics.

The problem of the present investigation has been essentially that of utilizing the Rorschach form-perception technique as an objective measure of personality organization and change during the course of insulin- and metrazol-shock therapy. During the course of the study, twenty-eight psychotic subjects were examined as well as eleven normal, control subjects. Patients assigned to pharmacological shock therapy were examined whenever possible immediately before the therapy was initiated and at intervals of approximately one month throughout the course of treatment. Similarly, the control subjects were given a Rorschach examination at monthly intervals. Detailed Rorschach summaries were made for all examinations in both the psychotic and the control series of cases.

For the purposes of this study, attention will be directed to the more general behavioral picture of the subjects during the several Rorschach interviews as well as to the shifting trends which have taken place in the scoring signs and categories. With respect to the former problem there are a number of points which need clarification. Those patients who were able to come to the examining room were cautious and guarded in their manner, fearful lest they do or say something which would place them in an unfavorable light. The higher the degree of orientation of the patient, the greater was this tendency to distrust the experimental situation. Certain subjects admitted that they were nervous because of the possible effect the examination would have on the granting of a trial visit or a discharge. Patients who were oriented enough to realize the significance of the experimental situation were also wise enough to note the spontaneous nature of the responses and as a result became over-cautious and highly self-critical. The response patterns of such subjects are found to be narrow and noncommittal, reflecting the strength of the intra-psychic pressures. In some instances it was quite apparent that the subject was making a number of implicit responses while the verbalized responses were extremely limited. One subject in the control group stated frankly that there were a number of responses she could make, but was

PERSONALITY PATTERNS DURING SHOCK THERAPY

unable to do so because of their content. There is reason to believe that unverbilized responses of the control group center around perceptions of anatomy and sex functions, while the unverbilized responses of the psychotic individual are related directly to the psychotic system.

The attitude of the subject towards the examiner and the experimental situation brings up the important question concerning the criteria by which improvement and recovery may be measured. As Kant, Phillips, and Stolzheise have suggested, much emphasis has been placed upon the return to the pre-psychotic picture.¹ It should be apparent, however, that a criterion of this nature is not a satisfactory index since it is difficult, even with the aid of observing relatives, to obtain a trustworthy picture of the pre-psychotic personality pattern. Of greater importance is the fact that *the personality changes which have taken place are as likely to be in ultimate adjustment as to interfere with that adjustment*. Mueller has suggested four criteria of complete remission.² These include the complete disappearance of schizophrenic symptoms, a normal affective relationship, full insight, and the ability to return to the normal sphere of work.

In a more specific sense, the disappearance of autistic gestures, mannerisms, stereotypy, attitudinizing, and automatisms may be taken as a sign of improvement in the patient. In this respect, particular attention was directed toward dys-symbolic behavior which has been defined by Skattowe as a "state of mind which manifests itself by the inability of the patient to formulate his concepts, to express his thoughts upon personal topics, or to discriminate the gradations of his emotions in language which is intelligible to others, notwithstanding that he may be in a state of clear consciousness. He still retains word-utilizing ability at the level of perceptual thinking, and so is not aphasic in terms of sensori-motor neurology." In the present series of cases dys-symbolic responses were observed in only two cases, one of which was diagnosed as a hypo-mania rather than a schizophrenia. It is interesting to note that the hypo-manic displaying dys-symbolic made a complete recovery while the other case has been classified as unimproved.

A point of particular interest is the development of mental blocks related to specific test forms. In such situations patients were observed to respond readily until certain cards were presented, and then would refuse to respond or would throw the card violently across the room. As far as could be observed, there was no consistency as to the card which was rejected in this manner. At a later, earlier examination, a subject might respond to the same card with no significant disturbance. It would appear that under certain conditions the test form serves as a stimulus which disturbs the intra-psychic balance and transforms a stable end-state into a state of requiredness. Defenses are built up in the form of rejection mechanisms through which the balance is maintained. The neurodynamic explosion which occurs when the affective complex becomes conscious evidence represents a breakdown of the functional barrier which exists between the motor area, the affective area, and consciousness. Luria believes that this insulation is a mechanism which saves the personality from the over-excitement and from the disorganization connected with an open appearance of conflict."⁴ Little is known concerning the process but there is reason to believe that some mechanism

¹ Kant, F., Phillips, P. L., & Stolzheise, R. M. Problems of shock treatment in schizophrenia. *J. nerv. ment. Dis.*, 1940, 91, 329-340.

² Mueller, M. Die Insulin und Cardiazol-behandlung in der Psychiatrie. *Fortschr. Neur. Psychiat.*, 1939, 11, 361-376.

³ Cited by J. S. Thomas, Some clinical examples of dys-symbolic: Its relation to shock therapy. *J. ment. Sci.*, 1940, 86, 100-108

⁴ Luria, A. *The nature of human conflicts*. New York: Liveright, 1932.

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unable to do so because of their content. There is reason to believe that the un verbalized responses of the control group center around perceptions of sex anatomy and sex functions, while the un verbalized responses of the psychotic individual are related directly to the psychotic system.

The attitude of the subject towards the examiner and the experimental situation brings up the important question concerning the criteria by which improvement and recovery may be measured. As Kant, Phillips, and Stolzheise have suggested, much emphasis has been placed upon the return to the pre-psychotic picture.¹ It should be apparent, however, that a criterion of this nature is not a satisfactory index since it is difficult, even with the aid of observing relatives, to obtain a trustworthy picture of the pre-psychotic personality pattern. Of greater importance is the fact that *the personality changes which have taken place are as likely to assist in ultimate adjustment as to interfere with that adjustment.* Mueller has set up four criteria of complete remission.² These include the complete disappearance of schizophrenic symptoms, a normal affective relationship, full insight, and the ability to return to the normal sphere of work.

In a more specific sense, the disappearance of autistic gestures, mannerisms, stereotypy, attitudinizing, and automatisms may be taken as a sign of improvement in the patient. In this respect, particular attention was directed towards dys-symbolic behavior which has been defined by Skattowe as a "state of mind which manifests itself by the inability of the patient to formulate his conceptual thoughts upon personal topics, or to discriminate the gradations of his emotions in language which is intelligible to others, notwithstanding that he may be in a state of clear consciousness. He still retains word-utilizing ability at the level of perceptual thinking, and so is not aphasic in terms of sensori-motor neurology."³ In the present series of cases dys-symbolic responses were observed in only two cases, one of which was diagnosed as a hypo-mania rather than a schizophrenia. It is interesting to note that the hypo-manic displaying dys-symbolic made a complete recovery while the other case has been classified as unimproved.

A point of particular interest is the development of mental blocks related to specific test forms. In such situations patients were observed to respond readily until certain cards were presented, and then would refuse to respond or would throw the card violently across the room. As far as could be observed, there was no consistency as to the card which was rejected in this manner. At a later or earlier examination, a subject might respond to the same card with no sign of disturbance. It would appear that under certain conditions the test form serves as a stimulus which disturbs the intra-psychic balance and transforms a stable end-state into a state of requiredness. Defenses are built up in the form of rejection mechanisms through which the balance is maintained. The neurodynamic explosion which occurs when the affective complex becomes conscious evidently represents a breakdown of the functional barrier which exists between the motor area, the affective area, and consciousness. Luria believes that this insulation "is a mechanism which saves the personality from the over-excitement and from the disorganization connected with an open appearance of conflict."⁴ Little is known concerning the process but there is reason to believe that some mechanism

¹ Kant, F., Phillips, P. L., & Stolzheise, R. M. Problems of shock treatment in schizophrenia. *J. nerv. ment. Dis.*, 1940, 91, 329-340.

² Mueller, M. Die Insulin und Cardiazol-behandlung in der Psychiatrie. *Fortschr. Neur. Psychiat.*, 1939, 11, 361-376.

³ Cited by J. S. Thomas, Some clinical examples of dys-symbolic: Its relation to shock therapy. *J. ment. Sci.*, 1940, 86, 100-108.

⁴ Luria, A. *The nature of human conflicts.* New York: Liveright, 1932.

analogous to parabiosis is responsible for the phenomena. Ouchtomsky has presented the theory of parabiosis as an inhibition resulting from over-excitement.⁵ It is further possible that purely psychological laws are operative, especially those involving speech and other intermediate cultural elements. This functional barrier thus becomes an important part in the preservation of personality equilibrium and is one of the integral parts of total organization. The reaction of the individual to the exciting stimulus apparently is dependent upon the strength of the affect and upon the degree of resistance offered by the personality to the excitement. Since individuals vary in their susceptibility to disorganizing influences, one is led to believe that some sort of functional stratification exists in the personality structure. In some subjects, disorganization takes place on the lowest, most primitive, levels while other subjects manifest symptoms of disorganization only at the level of intellectual and affective traces. The present data tend to agree with Piotrowski's conclusion that recovered patients show a noticeable disproportion between their potential and actual functioning during the examination while no disproportion is apparent in the unimproved cases.⁶ The pre-treatment picture of the recovered group is characterized by lack of concentration, numerous side remarks, good perception accompanied by uncontrolled, extensive associations, and an unevenness of performance. In the unimproved group, the perceptions are poor in spite of controlled elaboration and an even performance level.

Before considering some of the more general trends noted in the specific scoring categories, it might be well to review briefly the psychological processes indicated by the several Rorschach signs. Beck considers F plus, M, C, and Z as being the basic processes of which the differentiation of traits are manifestations. F plus is the index to form recognition ability, M is the index to inner creative activity, C is the index to affective experience, and Z is the index to organizing energy. The present discussion will include these four signs in addition to several other signs which Rorschach discussed originally. Among these signs are those which Piotrowski and others, notably Beck, have pointed out as capable of differentiating the psychotic from the non-psychotic. Beck believes that seven Rorschach test factors tend to make this differentiation. These factors are Dr, DW, C, CF, F plus, and P. The schizophrenic individual is more concerned with the rare details of the test forms and tends to interpret W in accordance with suggestions from D. The schizophrenic is further characterized by frequent color saturation with a relative low regard for form. Such individuals score low in M and show P responses less frequently than normal subjects.

In the present study, with respect to the stimulus selected, it is observed that the control subjects adhere to a D:W:Dr relationship which shows only a slight variation from one examination to another. The schizophrenic group, on the other hand, exhibits a wide variety of patterns which usually have additional weight placed upon the D and Dr factors. There is some evidence pointing to a relative decrease in D and Dr responses after insulin therapy, especially in those individuals who evidence a clinical improvement. It would be expected that responses to space detail would occur more frequently in the case of the control group, and that such responses would occur less frequently after the institution of shock therapy. However, in the subjects studied in this investigation, the S responses including DS, WS, and Drs were more frequent in the control series.

⁵ Ouchtomsky, A. *The theory of parabiosis*. Moscow, 1927.

⁶ Piotrowski, Z. Rorschach manifestations of improvement in insulin treated schizophrenics. *Psychosomatic Med.*, 1939, 1, 508.

Due to the fact that C, CF, and FC responses are less frequent than W, D, and Dr responses it is difficult to generalize upon the significance of their occurrence or lack of occurrence. It appears that the color-affective signs occur more often in the schizophrenic group than one might expect. The appearance of color responses in this group would lead one to believe that the schizophrenic is not the emotionally apathetic individual which he is so often described as being, but rather is an individual in whom there are deep-rooted affective stresses which are denied expression under ordinary conditions. The existence of a latent emotional component in the schizophrenic make-up is coming to be more generally accepted, not only as a result of Rorschach investigation, but on the basis of the results of other projection tests as well as a more thorough understanding of the symbolic nature of schizophrenic drawings. There is increasing evidence to support the hypothesis that many schizophrenic individuals are hyper-emotional rather than hypo-emotional. The difficulty in understanding this condition has been the inability to tap the behavioral level at which this emotional turmoil is expressed.

It has been suggested that M responses in the schizophrenic group occur less frequently than in the normal group. The nature of the schizophrenic thought processes, as far as they can be inferred, would seem to negate this conclusion. If M scores are indicative of phantasy thinking, one might reasonably expect an increase in the M sign of a group of individuals whose mental life consists largely in phantasy thinking. The present data support this contention. There is a falling-off of the mean M score after the institution of pharmacotherapy, indicating a lower frequency of phantasy thinking.

By far the most significant sign, both from the standpoint of differentiating the psychotic subjects from the non-psychotic subjects, and in differentiating pre-therapy examinations from post-therapy examinations, was found to be that of F minus. In the control series, F minus never exceeded 10 per cent of the total response while in the pre-therapeutic examinations of the psychotics, the F minus sign ranged up to 50 per cent. In cases showing a clinical improvement, the percentage of F minus decreased. F plus, while indicative of the same trend, was less reliable in that the F plus sign readily shifted to FY, FC, and CF. While F minus signs are sometimes observed in the control cases, it is usually found that there is some difficulty in interpretation. The procedure here has been that of scoring doubtful cases as F rather than F plus or F minus.

Two other significant signs were found to be Order and Approach. The order with which control subjects approached the test forms tended to be methodical, ranging in some instances to irregularity. The psychotic group, as a whole, tended to irregularity with a strong trend to confusion. In cases showing clinical improvement, there was a tendency for the order to shift from Cfn and Irr to Mth. Similarly, the manner of approach varied markedly in the two groups. The control subjects tended to maintain a relatively constant D:W:Dr ratio, while the psychotic subjects deviated in several directions, with particular over-emphasis on D and Dr.

It must be pointed out that several of the patients showed very decided shifts in a direction diametrically opposed to that which might be expected on the basis of the more general trends. In these cases the Rorschach picture became confused as a result of the institution of the shock therapy. This phenomenon is to be explained on the basis of the fact that the action of the insulin and metrazol serves to re-activate the psychosis, making it possible for the subject to give free expression to the psychotic impulses. Rorschach records of this nature were usually noted after 20-30 shock days. If this period was followed by clinical improvement, the records on subsequent examinations tended to approach the control norms.

CONCLUSIONS

The present findings indicate that there is a considerable shift in the several Rorschach signs from one examination to another, both in the psychiatric cases and in the control subjects. It appears that this shift is more striking in the psychotic subjects although there is some overlapping of the two groups. It would seem, however, that the response differences which make their appearance in the psychotic series are changes which take place within the individual psychotic framework, rather than changes in the direction of what are customarily considered normal patterns. This trend is less true for those patients who show the most complete clinical recoveries, although even here there remain certain rigid elements of the psychotic pattern which apparently are little affected by the therapy despite the fact that a clinical improvement has been evidenced. *In the light of this fact, one might question whether the pharmacological shock therapy has brought about any deep restructuralization of the personality pattern or of its underlying dynamisms.* An extension of the present study to a point where the data can be treated statistically would seem to be of utmost importance. It is obvious that changes take place in both groups and that these changes bear definite relationships to the particular groups. The nature and significance of these shifts are matters for further research.

PARENT-CHILD RELATIONSHIPS IN ATTITUDE

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THE following study is concerned with the origin of attitudes. Since this is such a comprehensive problem, the field has been narrowed by limiting our research to one specific factor in the derivation of attitudes—that of the influence of the home and parents. It is further limited to three particular attitudes rather than to attitudes in general.

Many studies have been made to determine the effect of such factors as age (11), sex (13), religion (3; 4), education (7), or socio-economic status (11), but not enough attention has been paid to the role of the family. Personal ties in the family are strong, particular experiences are shared by all of its members, and common opinions are often a direct result of this relationship. Thus, it is important that we determine to what extent and in what manner the family contributes to the formation of attitudes.

Before examining the procedure in this experiment, it is of primary importance to define our terms. Previous investigation (1) has shown that a tendency to act or think in a predisposed manner is present in our behavior. Furthermore, this tendency can be measured. It remains for us to choose our definition and our method of measurement from the variety (2; 10; 9, Chap. 13) that has been offered. Since existing conditions make the questionnaire the most feasible tool to use, a verbal character is assumed in our definition of an attitude. Therefore, we accept Allport's definition as the most logical, but we realize that our study is not a measure of "a mental state of readiness" but rather a *verbal expression* of that state, and that we can predict no action from any results obtained. Our definition then reads: The term "attitude" denotes a verbalized tendency towards a mental and neural set, organized through experience and exerting a dynamic influence upon the individual's response to all objects and situations to which it is related.

PROCEDURE

In order to determine the origin of attitudes, one must seek the environmental agencies which cause their formation. Since the home, or the family, is the first of these to act upon most individuals' attitudes, it was chosen as an example of a primary influence upon the formation of attitudes. The attitudes of parents are considered as representative of this influence, and these will be correlated with the attitudes of children to determine the similarity between the members of the family. Thus, if the correlation is high, it will mean that a close relationship exists, and it seems justifiable to assume that the correlations obtained will indicate the degree of influence of the family upon the attitude of the child.

The experiment was conducted at Northwestern University. Three questionnaires of the Thurstone (18) type were given to approximately 200¹ undergraduate

¹ The number of cases can only be approximated because of the fact that the number varied with the different tests. More than 1000 questionnaires were distributed to students in several different psychology classes, but the return was very low. Less than 200 papers were returned. In some cases, students answered only one or two of the three questionnaires, which would account for the number of cases varying with each of the three attitude scales.

students; copies of the questionnaires were sent to their parents. The students were permitted to answer the questionnaires outside of class periods, and either take or mail home the questionnaires for their parents. Whenever possible answers were obtained from both parents of a student, but when only one parent was available his or her score was included in the study. Participation in the experiment was voluntary, and it was emphasized that the questionnaires would have no influence on class grades. Through a code-number system, the subjects remained anonymous. Furthermore, each student and each parent was particularly requested to answer his own questionnaire without collaborating in any way with one another or with other members of the group. In this way an attempt was made to get a true expression of personal attitudes.²

SUBJECTS

A personal history blank was included with some of the questionnaires, but in many cases this was not answered. In classifying the subjects, it can only be said that they represent a typical group of undergraduate students from a large Midwestern university. Since the university is co-educational, both sexes are represented, but religious groupings, socio-economic backgrounds, or political affiliations are not differentiated. Members of all four college classes are included in the group; the ages ranged from sixteen to twenty-five.

MATERIALS

The three questionnaires are Thurstone's Attitude toward God Scale, Form A (18), Stagner's Opinion about the Depression Scale (14; 15), and Lomas' Attitude toward the New Deal Scale (8). The first two scales were chosen in order to follow up Gilliland's study (5) of the influence of the home upon attitudes. Gilliland stated that the Thurstone Scale was chosen because it probably measures an attitude dependent for the most part on home influences and not on school influences. The Stagner Scale, on the other hand, investigates an attitude which is affected by environmental factors other than the home. The Lomas Scale was added to the others because it measures an attitude which is high in public attention and which, therefore, emphasizes individual differences.

RESULTS

Tables 1, 2, and 3 give the number of cases, coefficients of correlation, and probable errors for the group on all three attitude scales. The group has been analyzed to obtain correlations for each sex in relation to each parent and in relation to a midscore representing the average scores of both parents. These correlations represent the degree of relationship between each group of subjects. All correlations are positive and represent a significant relationship, since in all but one case the coefficient of correlation was at least four times the probable error.

² Directions to students were as follows: "Here are some questionnaires concerning your attitudes on religion and politics. We are very anxious to have your opinions and those of your parents on these questions and will appreciate your cooperation in filling them out and in seeing that your parents do the same. If you are not living at home, we will be glad to give you a stamped, addressed envelope to enclose with the questionnaire. Please send them to your parents and ask them to return them to our office. We are not concerned with your personal identity, so that you need not sign any of the pages. The papers are numbered so that we will be able to identify the parents of a particular student; and each paper is marked for a student, father, and mother. Be sure to read the directions for each set of statements, follow these directions closely, and answer all of the questionnaires. You are also urged not to cooperate with your parents."

On the Attitude toward God Scale the correlations are not high but are consistent. The range is from .24 to .36. The average correlation is .29, which represents a certain relationship but not a strong one. The correlation between sons and parents⁸ (.29) is just below the value usually considered statistically significant; the relationships between sons and fathers (.29), daughters and

TABLE 1
ATTITUDE TOWARD GOD SCALE

	FATHERS			MOTHERS			PARENTS		
	N	r	P.E.	N	r	P.E.	N	r	P.E.
Sons	81	.29	.07	81	.31	.07	74	.29	.08
Daughters	125	.24	.06	133	.27	.05	116	.25	.06
Children	205	.26	.04	218	.36	.04	195	.32	.04

TABLE 2
ATTITUDE TOWARD NEW DEAL SCALE

	FATHERS			MOTHERS			PARENTS		
	N	r	P.E.	N	r	P.E.	N	r	P.E.
Sons	71	.56	.06	67	.66	.05	62	.59	.06
Daughters	113	.53	.05	122	.58	.04	110	.58	.04
Children	184	.55	.03	191	.62	.03	170	.60	.03

TABLE 3
OPINION ABOUT THE DEPRESSION SCALE

	FATHERS			MOTHERS			PARENTS		
	N	r	P.E.	N	r	P.E.	N	r	P.E.
Sons	80	.36	.07	81	.48	.05	78	.43	.06
Daughters	130	.42	.05	125	.45	.04	113	.53	.05
Children	209	.41	.04	218	.47	.03	194	.52	.04

fathers (.24), and daughters and parents (.25) are borderline. The rest of the correlations in this group show significant relationships. Sons have a closer relationship with fathers and parents than have the daughters. Mothers have a closer relationship with both groups of children than the fathers have. But too much

⁸ The term "parent" will hereafter refer to the average of the scores of the father and mother.

emphasis should not be placed upon these differences since all the critical ratios are low; none are over two and most of them are below one.

The correlations on the Attitude toward the New Deal Scale are not only statistically significant but show a strong relationship. The range of correlations is from .53 to .66, with an average of .59. The highest relationship is between sons and mothers. In fact, the mothers again have a closer relationship with their children than the fathers have. In general we find that the attitudes of the sons are more like those of their parents than are the daughters' attitudes.

On the Opinion about the Depression Scale the correlations range from .36 to .64. The average correlation (.42) is again a strong one. Daughters show a closer relationship with fathers and with parents than do the sons, who are more closely related to mothers. In this scale, the highest relationship is found not between the mothers and their children but between parents and daughters or parents and children.

INTERPRETATION

Previous research (4; 5; 6) has demonstrated that religious attitudes depend a great deal on the type of home.⁴ At the present time, there is a growing tendency among parents to allow their children greater freedom in religious beliefs. Church attendance and membership in church organizations are less active during college years (16) since other activities come to the fore. All of these factors may influence our correlations, which are not strong. Our results further confirm those of Gilliland (4) who points out that factors other than the home alone are involved in the formation of a religious attitude.

The high correlation on the New Deal Scale may be explained by the fact that institutional influences affect the family as a whole and thus influence the attitude of each member. Children will react to the New Deal as it has affected their family, not as it has affected someone else (e.g., their friends or teachers). It is also, no doubt, a more potent influence in the daily thinking and acting of the average person than either of the other attitudes studied.

The results on the Opinion about the Depression Scale show a relationship stronger than that for the Attitude toward God Scale, but weaker than that for the Attitude toward the New Deal Scale. It seems that the institutional forces which play upon the family are again in evidence here. However, the concept of fascism which is tested in this questionnaire is so complex—Stagner names seven components (14; 15)—that the effect is not as strong as that of the New Deal which may be represented by only a few factors.

Before we summarize the results of this study, it is necessary to mention one more factor which might have some influence, namely, cooperation between the fathers and mothers. In order to determine the extent of such cooperation, correlations on father-mother relationships for all three scales were determined. They are $.40 \pm .04$ for Attitude toward God Scale, $.73 \pm .03$ for Attitude toward the New Deal Scale, and $.58 \pm .03$ for Opinion about the Depression Scale. It seems to the authors that, while these correlations are slightly higher than those between parents and children, they are what we might expect. They suggest that the relationships are for the most part at least measures of true relationship of attitude and not due

⁴The fact that the type of home has some influence upon the child's attitudes was indicated in a study of Catholic families (5) where correlations from .42 to .73 were obtained between the attitudes of children and their parents on the Thurstone Attitude toward God and the Stagner Opinion about the Depression Scales. While these correlations were obtained upon only a small group of families, they do indicate that the family influence was very great and was further augmented in this case by attendance at a Catholic school.

to collaboration in filling out the questionnaires. It is reasonable to suppose that similar attitudes would be found among married couples and that these would be closer for some attitudes, such as the New Deal, than for others, such as those on religious subjects (Cf. Terman, 17).

It should also be pointed out that young people of college age are subjects in this experiment. This might be a clue to the results which were obtained. By this time in an individual's development, that is, from sixteen to twenty-five years of age, many forces other than the family have contributed to the formation of his attitudes, and it is not always possible to separate all of these contributing factors. Therefore, it would seem that the only solution to this problem is to investigate children at a much younger age before they are exposed to the many environmental influences outside the home. Unfortunately, reliable tools for the measurement of attitudes of very young children do not exist. Development of such tools is the next step in the solution of this problem. As soon as we can measure the attitudes of younger children, there is no doubt that a great deal more light will be shed on the problem of the derivation of attitudes.

SUMMARY AND CONCLUSIONS

1. A positive relationship was found between the attitudes of children and both of their parents in all the attitudes that were studied. This relationship is strongest in the attitude toward the New Deal, less in the attitude toward fascism, as measured by the Opinion about the Depression Scale, and weakest in the attitude toward God. These results may be clearly seen in the average correlations between parents and children. They are .59 for attitude toward the New Deal, .42 for attitude toward fascism and .29 for attitude toward God.

✓ 2. In all three attitudes mothers have a closer relationship with their children than do fathers. This relationship between mothers and children is strongest in the attitude toward the New Deal, less in the attitude toward fascism, and weakest in the attitude toward God.

3. Sons are more closely related to both parents than are daughters on the attitude toward the New Deal and attitude toward God and they are about the same on their attitude toward fascism.

A relationship between the attitudes of parents and those of children does exist, but the degree of relationship depends upon (1) the home situation, (2) the subjects tested, and (3) the attitude studied. The home is a source for the development of attitudes but in some cases the influence is much stronger than in others. The child's attitude may or may not be largely influenced by the home, depending upon the attitude and the home. In the attitudes studied by Höffeditz the home had only a small influence, while in the homes studied by Newcomb the attitudes he studied were much more dependent upon home influences. In a small number of Catholic homes which we studied, where the children also attended a Catholic school, there is evidence that the influence was even greater than in any of the other groups studied on attitude toward the New Deal and attitude toward God. Further study is needed on younger groups to determine the extent of the home influence on some of these attitudes and the age at which these attitudes arise.

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THE SPATIAL DISPERSION OF PSYCHOTIC RESPONSES IN THE TAPPING TEST

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THE capacity of psychotic patients to perform simple psychomotor tasks has been investigated by a variety of methods. One of the most convenient of these is the measurement of tapping rate. Gatewood (2) used a standard ruled sheet of paper and counted the number of dots made between the ruled lines in a 30-second period. The same procedure was followed by Boring (1), but modern workers like Shakow and Huston (4) have preferred to use a tapping key with an automatic electrical counting device. In a recent study (3) on the effects of shock treatment upon psychomotor ability the single tapping board (8 inches x 4 inches in area) and stylus, recommended by Whipple (5), were used with electrical recording on waxed paper. During these experiments an observation was made by the present writers, which does not appear to have been mentioned previously in the literature on this topic and which seems sufficiently interesting to put on record.

The subject was seated at a table and instructed to tap with the stylus upon the plate as rapidly as possible from the word "go" until the word "stop" was given after an interval of 25 seconds. In this situation, as previous observers have noted, psychotic subjects tend to show many different types of response. Though records of normal subjects show a certain amount of irregularity in speed from moment to moment and between one trial and the next, schizophrenic subjects, in particular, are liable to show much more marked discontinuities in response. Psychotic subjects, thus, make poorer total scores, not only because their maximal speeds may be slower than the normal but also on account of capricious variation in speed. Often it is impossible to discover what mental processes take place in abnormal subjects in the time during which tapping is suspended or slowed. If, however, the patient is allowed the freedom of self-expression provided by the simple board and stylus, a tendency to waste time by drawing patterns or "doodles" is frequently exhibited. The technical difficulty of recording the spatial distribution of the marks on the tapping plate was at first overcome by making the subject repeat the experiment with a piece of waxed paper or carbon paper inserted face downwards under a sheet of white paper, placed on top of the board to prevent the pattern from being seen. This method had two defects, namely, that no simultaneous record of the speed was obtained and that an observant patient would realize that tapping on the metal plate produced an electrical contact whereas tapping upon paper did not. These difficulties were surmounted by constructing a stylus within which a circuit was completed when the point rested upon any hard surface. It was found that patients who showed the pattern-drawing phenomenon on the ordinary tapping plate or on waxed paper with the ordinary stylus also showed the phenomenon when they used the specially prepared stylus.

In comparing records of normal and psychotic patients, several types of difference in the spatial distribution which resulted were noticed. In the normal records no tendency was observed for the dots to be organized into any pattern and there was a variable degree of random scattering around focal points. Example 1 in

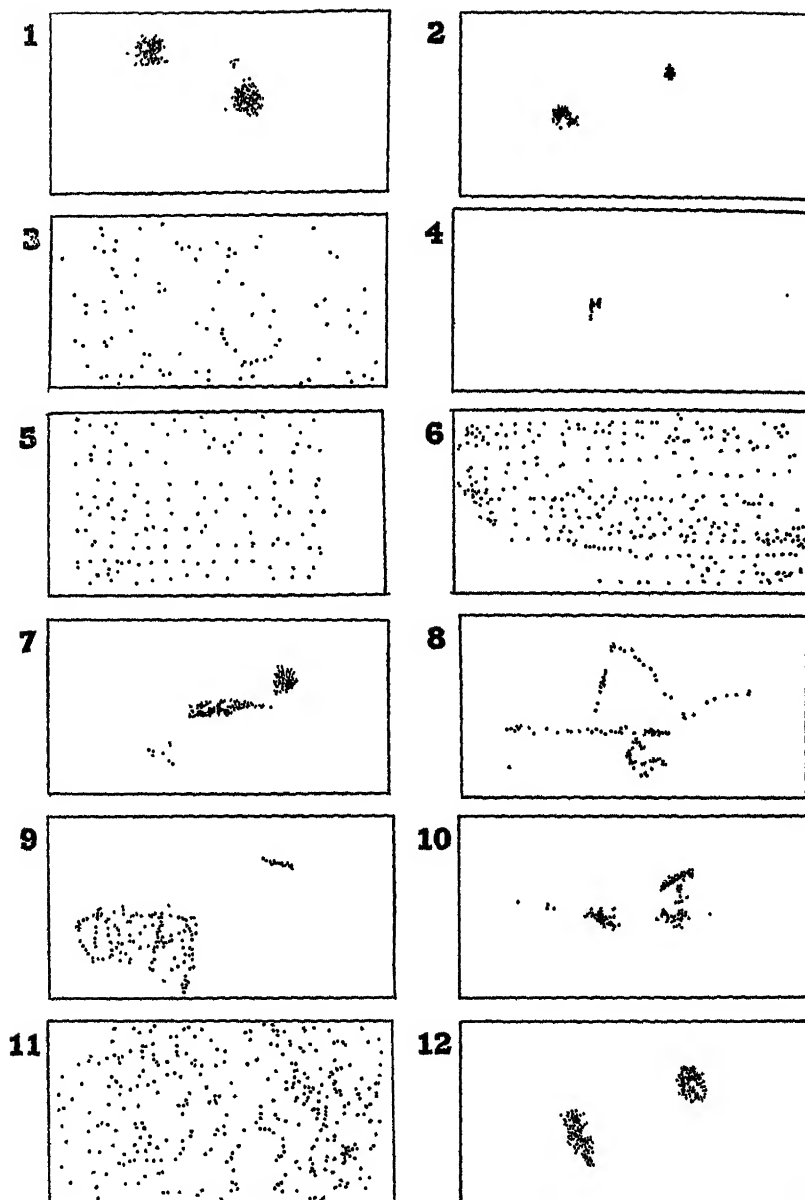


FIGURE 1

EXAMPLES OF SPATIAL DISPERSIONS SHOWN BY DIFFERENT SUBJECTS

In examples 1, 2, 4, 7, 9, 10, 11, and 12 the dots due to the right hand are distributed mainly upon the right side of the plate. In examples 5, 6, and 8, the dots due to the right hand lie above those due to the left hand. In 3, 8, and 9 there is overlapping of the distributions for the two hands. The area of each figure is $1/16$ of its original size.

Figure 1 is that of a normal female subject with a medium degree of dispersion and Example 2 is taken from a male subject who showed what is about the minimum degree of dispersion for normals. In abnormal records the dispersion was usually far greater than with normals but occasionally it was much less. Example 3 was typical of the diffuse patterns made by a female patient with long-standing schizophrenia whose speed was usually about one-fifth of the normal rate. The right and left hands are difficult to distinguish here. In Example 4 an extreme lack of dispersion is shown in the record of a female schizophrenic, only recently admitted to hospital, with a speed two-thirds of the normal rate. In some cases the organization of the response took the form of pseudographic manifestations. Example 5 was done by a male schizophrenic whose speed was usually not far below the normal. Another male schizophrenic (who did not stop when told) produced Example 6, in which there is less regularity and again the type of response which suggests writing. Other patients reacted with organization of a different kind, which was sometimes inchoate, as in Example 7, done by a male catatonic. Often, however, a tendency to draw pictures rather than to write was shown, and Examples 8 and 9, taken from among the responses of a melancholic female and a catatonic male patient respectively, show very imaginative patterns.

It was noteworthy that most of the patients who showed very abnormal responses had psychoses of several years' standing and they were nearly all diagnosed as schizophrenics. Schizophrenia is a disorder of the volitional mechanisms, and it seems particularly difficult for such patients to undertake effectively the task of tapping as rapidly as possible. The performance develops a personal meaning for them. They wander off into their own realms of phantasy and this is expressed by the obsession to draw irrelevant patterns. To a considerable extent the tendency for these patients to tap very much more slowly than the normal can be attributed to the transference of energy, which would normally go towards speed, into channels unfruitful from the point of view of the main task they have to do. Manic patients, on the other hand, do not, as a rule, show any organized peculiarity of response. Example 10, from a female patient in an elated phase of manic depressive psychosis, exhibits a disorganized, irregular dispersion. The speed here was within normal limits.

That abnormal dispersions can be obtained in cases where mental disorder is suspected, as well as in those actually certified, was demonstrated by an experiment in which two male students were compared. One of them, whose dispersion is given in Example 11, had shown a number of signs of mental peculiarity. His Bernreuter test scores in three out of the four sub-tests (that is, B_1 -neuroticism, B_3 -introversion and P_1 -self-confidence) were so unsatisfactory that, according to the norms which accompany the tests, he merited a psychiatric consultation. The other subject was not suspected of being in any way psychopathic and the dispersion of taps (Example 12) is quite normal; his scores on the Bernreuter test were quite normal also.

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REVIEWS

EDITED BY STANLEY G. ESTES

HEREDITY AND ENVIRONMENT: A CRITICAL SURVEY OF RECENTLY PUBLISHED MATERIAL ON TWINS AND FOSTER CHILDREN. By R. S. Woodworth. New York: Social Science Research Council, 1941. Pp. x+95.

To a field of research where *advocates* have sometimes crashed the gate, now comes a referee with eminent qualifications for a delicate assignment. The Committee on Social Adjustment of the Social Science Research Council invited Woodworth to appraise recent studies of foster children and twins "in order that there might be available . . . an integrated statement of tested research procedures and resulting knowledge." In their selection the Committee secured a scholar whose professional interests and writings have been nearly as broad as psychology itself, but whose own investigations have not been directly in the specified area; it was not necessary for Woodworth to review himself. More important than this almost accidental qualification was the clarity and detachment, the thoroughness and high order of relational thinking which two generations of psychologists have come to depend upon.

Viewing first the work on twins, Woodworth considers the basic questions of diagnosing zygotic origin, sampling, and the "logic of twin studies," and then the kinds of problem which various twin investigators have approached: the interaction of heredity and environment, the influence of prenatal and natal environment, the relative influence of heredity and environment upon physical and intellectual traits, the advantages in much vs. little education, urban vs. rural environment, etc. With respect to the "logic of twin studies," he presents a highly interesting conclusion in view of the vast literature on identical:fraternal comparisons which has accumulated in recent years: "Having convinced ourselves (in considering the "twin method") that the environment differs more for fraternal than for identical twins, we cannot derive much information from a comparison of the results from the two classes of twins.¹ From the results on identicals we can infer that environment can cause a certain amount of difference between individuals of the same heredity, and that the differentiating effects of environment

¹ Although questioning the precision of quantitative identical:fraternal twin comparisons, Woodworth does consider it worth while to "consider the figures as they stand." From the Newman, Freeman, and Holzinger twin data, he finds for stature, weight, and intelligence the ratio of the average intra-pair difference of the identicals to the average intra-pair difference of the fraternal. (The average difference in intelligence was first corrected for test reliability by Woodworth, but not by the original authors.) Statistical logic would seem to require that the squares of these average differences rather than their first powers be used for such a comparison, since the first powers of average differences are not additive, and are proportional to $\sqrt{1-r}$, while the second powers are additive, and proportional to $1-r$ (r being the intra-pair correlation, and the value representing the "degree of determination" of the twins' common genetic and environmental background for the variance of their test scores). In a later section, comparing identical twins reared apart with the general population (p. 57), Woodworth does in fact, employ the squares of the average differences. In the present comparison of physical traits and intelligence, Woodworth's conclusion regarding their approximate equality with respect to environmental contribution to twin differences would not be changed if squares instead of first powers were used, but the absolute estimates of environmental contributions (36 to 41 per cent) would be appreciably reduced.

are about equal in physical traits and in intelligence, when the identicals are reared together.

"As to fraternal, we know that they differ more or less in heredity, and that their effective environments differ in (partial) conformity with their difference in heredity. Because of this combination of factors, fraternal differ more than identicals and they seem to differ about as much in intelligence as in physical traits. The interaction of heredity and environment in the case of fraternal leaves little chance for separating the two factors and assigning to each its share. There is really little point in comparing fraternal and identicals; there is more point in comparing fraternal with ordinary siblings, since the hereditary difference should average the same while the environment would on the whole be more alike for twins than for other siblings" (p. 21).

Woodworth admits, however, that in respect to somatic characters on which the social environment has little effect, identical:fraternal comparisons have "yielded results that are apparently sound and sometimes quite important—as in regard to susceptibility to tuberculosis, etc." (p. 9).

Studies of identical twins reared apart, "the most important group for scientific purposes," furnish the means for testing a whole bracket of hypotheses not amenable to investigation in studies of identical and fraternal twins reared together. "There are two main ways of treating the data from separated identicals. The more obvious way is to compare them with identical twins reared together, as can be done either by comparing the mean difference between twins in the one class with the corresponding difference in the other class, or by comparing the correlation between the paired individuals in the two classes. . . . The other way . . . is to look for environmental factors that might differentiate the members of a separated pair and to determine whether a given factor has produced a significant difference between the favored and the disfavored twins taken as a group" (p. 24).

From the existing sample of twins reared apart, Woodworth finds two conclusions which "seem probable even though the sample is still far too small to make either conclusion sure. In the first place, radical differences in education can create substantial differences in intelligence, so far as intelligence is measured by our tests. Differences in I.Q. as great as the standard deviation of the population have been found in several instances, corresponding to large differences in educational advantages. . . . In the second place, however, the differences between identical twins reared apart are remarkably small except in those cases where the contrast of educational advantages was very great. For the majority of the separated identicals the I.Q. difference was no greater than for identicals reared together. When individuals of identical heredity are subjected to environments differing about as much as those of the children in an ordinary community, such identical twins differ much less than the children of such a community. Therefore the differences found among the children of an ordinary community are not accounted for, except in small measure, by differences in homes and schooling" (pp. 29-30).

Next considering the approach which employs foster children as subjects, the author discusses the investigator's requirements in studies of siblings who are separated and brought up in different foster homes, unrelated children brought up in the same home, unrelated children reared in a common environment, as in an orphanage, and samples of children "presumably equal on the average in heredity" placed in foster homes of different grades. Appraising existing studies against these justifiably strict requirements, Woodworth concludes: "On the whole we may expect results of considerable practical value, but of no great scientific precision, from the study of foster children. We have no precise indication of the

individual child's heredity—apart from his own performance which is dependent also on environment—and our samples are not demonstrably equal in heredity. Our measures of the environment are admittedly incomplete, and our measures of intelligence while more adequate than the rest still have their limitations. Perhaps the main difficulty is that the range of foster home environment is greatly curtailed at the lower end. It does not reach down into the jungle as we might desire for purely scientific purposes" (p. 46).

A detailed analysis of five large-scale foster child studies follows. The studies are compared and found to show good agreement in the magnitude of demonstrated environmental effect on I.Q.'s when loose ends in some of the studies with respect to sampling, selective placement, test standardization, and statistical misconceptions are cleared up. In summary Woodworth states:

"The gains of foster children and of other children in changed and improved environments have been much less striking than might have been expected. About 5 or 10 points in I.Q. is all that can be claimed for the average gain, with much individual variation above and below this average. Even this amount of gain is not established beyond doubt—nor, to be sure, is it proved that still better environments would fail to register much larger gains. Somewhat larger gains and losses have indeed been indicated in some of the identical twin pairs who received very unequal educational opportunities."

An oversight should be cited in the discussion of the Freeman, Holzinger, and Mitchell sample of separated siblings reared in different foster homes (p. 50). Woodworth quotes the low correlation, .25, which was based upon a "double entry" scattergram of I.Q.'s of sibling pairs of wide age-range, including "teen" ages for which the 1916 Stanford-Binet was not adequately standardized. But Freeman, Holzinger, and Mitchell also reported the I.Q. correlation of separated siblings between the ages of 5 and 14 years inclusive. This was .44, or nearly the value representative of a large number of studies of siblings reared in their own homes.

An interesting comparison is made by Woodworth between the total environmental contribution to I.Q. variance deducible from studies of twins reared apart and the contribution inferred from a multiple correlation of measured environmental factors with foster child's I.Q. in the Stanford study of foster children (p. 57). The estimated contribution came to 18 per cent² in each case, but the reader may possibly agree with Woodworth that "neither of these estimates can be regarded as at all precise." The tally of the two estimates might suggest that almost the whole contribution of environment to I.Q. variance in the foster children is due to identifiable factors, leaving the residue to heredity. Woodworth is cautious, however, in accepting the attempts of several of the foster child investigators to reach such inferences regarding the total environmental contribution (intra-family plus inter-family), and he prefers to hold his own conclusions to the manifest results as *between families*, where the "shares of heredity and environment . . . seem to be about equal" (p. 56).

A 16-page section discusses studies of children in institutional homes. Results of some interest have come from studies of children who remain in orphanages, of children who have been given a nursery school program within the framework of an orphanage, of children who have been shifted from an orphanage to a school for the feeble-minded, and vice versa. The sampling hazards are even greater here, however, than in studies of children in foster homes, and very little evidence obtained under necessary safeguards has so far accumulated. With regard to the Iowa "leveling" hypothesis, that bright children entering a group would raise the

² The difference between 18 per cent here and 17 per cent reported in the original Stanford study is accounted for by decimal places preserved in calculations.

level, dull children pull it down, "and the resultant of all these forces would pull the individuals together toward a common level of mentality" (p. 75), Woodworth comments succinctly: "The 'leveling' hypothesis makes sense, certainly, but the evidence adduced for it is irrelevant and worthless for the purpose" (p. 75). This is followed by a well-documented discussion of statistical regression and its simulation of the "leveling" phenomenon.

Suggestions for social research on heredity and environment conclude the monograph. Studies of identical twins separated not only in early life, but in adolescence and the early adult years, would be of value in providing evidence upon what periods of development are most susceptible to environmental influences of various kinds. The merit of progressive developmental studies both of twins and of foster children is emphasized, for studying the effect of specific environmental factors at the time of their operation. "It is now feasible and desirable," writes Woodworth, "for geneticists, psychologists, cultural anthropologists, educators and sociologists to join forces in studying the interplay of genetics and environmental factors in social adjustment" (p. 88).

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CONDITIONED REFLEXES AND PSYCHIATRY. By Ivan P. Pavlov. New York: International Publishers, 1941. Pp. 192.

Conditioned Reflexes and Psychiatry forms the second volume of the *Lectures on Conditioned Reflexes*. The title is derived from the interest which Pavlov took in the problems of clinical psychology from the time he was 80 until his death, and covers a rather miscellaneous series of topics. The greater part of the content consists of Pavlov's public lectures and deals with the relation of psychiatric problems to the facts and theory of conditioning. Two chapters of the book, amounting to somewhat more than one-third of the total content, are already familiar to English readers: Pavlov's chapter in *Psychologies of 1930*, and his well-known "Reply of a Physiologist to Psychologists," which appeared in the *Psychological Review* in 1932. In addition, the book contains three brief appendices consisting of addresses to special Soviet congresses, which cast some light on Pavlov's political feelings and his relation to the U. S. S. R.

The bases of Pavlov's contributions to psychiatry lie in his discoveries concerning the relationship between inhibition and excitation. Both processes, according to Pavlov, first diffuse over the cerebral hemispheres and then concentrate at a point appropriate to the particular stimulation. The force of the process is the prime determinant of the course of irradiation and concentration, a weak process tending to irradiate, a moderate one to concentrate, and a strong one again to irradiate. Thus, in the case of the excitatory process, a weak stimulus irradiates, raising to threshold latent subliminal excitations in the cortex and disinhibiting negatively conditioned areas in such a way as to transform a negative stimulus to a positive one. A moderate excitatory process concentrates on a limited cortical point and its main expression is in the elicitation of a circumscribed response, while, on the other hand, the irradiation of a very strong excitatory process raises the tonus of the entire cortex so as to produce a maximal effect from any successive stimulation.

Irradiation of inhibition is treated in much the same fashion, with irradiation of a weak process bringing about an isolation of certain parts of the cortex, a state which Pavlov sets equal to hypnosis. A stronger inhibition brings about one of three special effects: either a condition in which the intensity of the response does not vary with the intensity of the stimulus in the normal manner (phase of

equalization), one in which a weak stimulus produces a greater effect than a strong one (paradoxical phase), or one in which the negative stimulus produces a positive effect (ultraparadoxical phase).

Out of the balance of the processes of excitation and inhibition comes Pavlov's typology, according to which he classifies his dogs in terms of the essential features of their nervous systems. There are three coordinates to the system of classification: (1) the strength of the processes, (2) their degree of equilibrium, and (3) the relative lability or fixity of this balance. The first heading is divided into two groups, animals with strong nervous processes and those with weak. The strong animals are further subdivided into well-balanced animals and those having a poor balance between excitation and inhibition. Strong well-balanced animals again form two groups, the labile and the inert. The four groups thus formed bear a strong resemblance to the familiar traditional Hippocratic types. The strong but unbalanced animal, excitable and unrestrained, with intense processes of both inhibition and excitation, but with the latter dominant, parallels Hippocrates' choleric type, while the weak animal, showing great lability to inhibition, is of the melancholy humor. In the strong well-balanced class, the inert animal is the calm unperturbable phlegmatic type, while the labile animal represents the sanguine.

One or two examples will perhaps serve to show the way in which these two factors, the environmentally determined balance between inhibition and excitation and the influence of the animal's type (hereditary), are used in interpreting pathological symptoms. In the chapter on obsessions and paranoia Pavlov discusses a case of Kretschmer's in which a young girl, experiencing sexual attraction and the resulting conflict with her social mores, eventually arrives at the fixed idea that the serpent from the Garden of Eden is residing within her. In his interpretation Pavlov goes back to the ultraparadoxical phase mentioned in connection with the irradiation of inhibition. Dogs were conditioned to respond positively to one metronome tempo, negatively to another. When the values of the cues were reversed appropriate responses began to be made when, in the ultraparadoxical phase, the dog suddenly produced a maladaptive positive response to the negative cue and a withdrawal response to the positive. Interpreting Kretschmer's case by analogy, Pavlov says that the patient had a strong idea of her sexual purity and an intense sexual urge. Owing to the generalized inhibitory circumstances in which she lives, the ultraparadoxical phase occurs, and "this concept (*i.e.*, her sexual purity) . . . irresistibly, physiologically, changes into a reversed one . . . (which), reaching the intensity of a sensation, causes the patient to feel the presence of the sexual seducer in her very body" (p. 160).

The role of the typology in interpretation of psychiatric phenomena may be seen in his discussions of paranoia and hysteria. Paranoia is interpreted in terms of a concept of "pathological inertness" which arose in conditioning experiments. A dog conditioned to a tone issuing from beneath the table upon which he stood customarily looked over the edge of the table in the direction from which the tone appeared. Although the location of the stimulus and finally even the modality was subsequently changed, the response remained, an example of "pathological inertness." In analyzing human obsessions Pavlov hypothesizes that "an occasional accentuation of one or another of our emotions (instincts) . . . may cause the corresponding cortical cells to be ultramaximally excited. This finally brings about their pathological inertness—an irresistible concept and sensation which continues to exist long after its real cause has been withdrawn" (p. 156). In his interpretation Pavlov cites the hypothetical case of an individual of the choleric type, strong nervous processes but unbalanced and dominated by the excitatory, in

whom the conviction of superiority is frustrated by a lack of talent and by objective failures. As a result of his constitutional type there is insufficient inhibition of his feelings of superiority, and they are eventually raised to a level of reality and fixated in a pathologically inert system.

The hysteric, likewise, is explained in terms of the typology, with the weak type being susceptible. The melancholic is characteristically weak in internal inhibition, and the domination of external inhibition through irradiation prevents the regulatory effects of surrounding areas of the cortex. The result is that life is determined by primal urges and the patient is unusually susceptible to suggestion. Suggestion is described as "a concentrated excitation of a definite stimulation, sensation or its trace, having been given a predominant 'illegitimate' and irrepressible significance. . . . In a weak cortex with a lowered tonus it becomes concentrated and is accompanied by an intense negative induction, cutting it off from all foreign influences" (p. 108).

The content of the book suffers from three main faults. In the first place the interpretations seem to be somewhat system-ridden, and the treatment of pathological phenomena often gives the impression of forcing a somewhat reluctant material into a predetermined cast. In addition the analyses are almost always argued by analogies whose rigor is somewhat difficult to determine and whose application is sometimes open to question. Finally, the argument is usually the "nothing but" type of restatement; "(schizophrenic) catatonia is nothing more than the operation of tonic reflexes" (p. 41). If the reduction to a lower level of description afforded a new insight it would be fruitful, but we can hardly say "we may now treat obsessional neuroses as we do fixation in conditioning experiments." While many instances of cures are given among Pavlov's dogs, they are almost without exception the result of bromidic doses, a therapeutic technique with a limited application in human neuroses.

The book as a whole suffers to some extent from the disjointed character which is a result of the fact that each chapter was planned as a separate address. This introduces a certain amount of repetitiousness, and occasionally makes it harder to follow a line of argument which has already grown somewhat complex. The translator, however, has made a very readable text, and this collection of Pavlov's last papers will provide a fitting closure for his work.

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THE MASK OF SANITY, AN ATTEMPT TO REINTERPRET THE SO-CALLED PSYCHOPATHIC PERSONALITY. By Hervey Cleckley. St. Louis: C. V. Mosby, 1941. Pp. 298.

It is with a facile pen and many an apt literary citation that Dr. Cleckley, from a rich background of acquaintance with scientific contributions that bear upon the subject, deals with one type of personality disorder, the "so-called psychopathic personality."

The author, ranging through most of the definitions and classifications that have been offered concerning personality abnormalities, very clearly discerns that "the almost universal tendency of writers to separate a disorder vaguely and variously defined and explained into many, ever-increasing and sometimes largely academic or trivial subtypes does not contribute to the understanding of this disorder by the ordinary student." From the standpoint of psychiatric understandings, Cleckley feels that the psychopathic personality can without great exaggeration "be called the *forgotten man* of psychiatry." Even in many a standard textbook, "not only is the chapter on psychopathic personalities often short, and sometimes vague or

halfhearted, but nearly always it is also involved with personality types or disorders which bear little or no resemblance to that with which we are now concerned."

Dr. Cleckley adds to the picture by stating that the cases of psychopathic personality are numerically important (more than 12 per cent of 857 new admissions in the Psychiatric Hospital for Veterans with which he was connected) and confirms the generally acknowledged fact that they represent exceedingly baffling individuals to deal with in hospital practice and from a legal point of view. Every statement that he makes with regard to the group is borne out by his case illustrations.

The author's methodology in recording and grouping his case material so that the facts concerning them may be seen in their true significance leads him to give nine examples of "the disorder in its full development," and six instances of "the disorder as a part manifestation." These last are particularly interesting cases; we find the "psychopath" (a shorthand term to designate psychopathic personalities) portrayed as a businessman, a man of the world, a gentleman, a scientist, a physician, and even a psychiatrist. Plentifully weird tales are these, with their Southern setting.

The reviewer makes a point of the Southern scene because during his own long experience with individuals of the type under discussion, he has never known of some of the behavior manifestations that Cleckley describes—particularly the long bouts of drinking in bawdy houses or in the open; men lying long stupefied in fields, woods, or ditches. Then the tolerance of families, friends, and authorities under the law toward this and other forms of utterly debased behavior is foreign to our experience.

The reviewer feels that it is a pity that Dr. Cleckley apparently did not have access to the preliminary report of a long-time research (given at the International Congress of Mental Hygiene in 1930) concerning abnormal personalities which is being conducted by a group of us. He would there have found ideas kindred to his own which, in particular, would have led him to cite the reviewer as holding different views than those expressed in 1914 (not 1920). Then, too, one can wish that the author had paid more attention to certain more recent conceptions of the probable organic etiology of psychopathic personality.

In considering descriptive definitions Dr. Cleckley favors Korzybski's theories of general semantics and offers the apparently original suggestion that this personality disorder might well be termed *semantic dementia*.

In order that the psychopathic personality may be recognized readily and differentiated from others, Cleckley devotes one chapter to "A clinical profile." He gives twenty-one distinguishing items, but there is considerable overlapping. The psychopathic personality usually presents attractive and positive characteristics, whether estimated by psychometric tests or by conversational reactions. He often appears more clever than the average person, and does not suffer deterioration of intellectual powers through the years. He is free from demonstrable irrationality and from other commonly accepted symptoms of psychosis.

He is easily found to have no sense of responsibility, no loyalty. He seems to be incapable of attaining comprehension of an attitude in other people which causes them to value truth for which he himself has a total disregard. He never sincerely accepts blame and, indeed, shows almost no sense of shame. He commits thefts, frauds, etc., for even small stakes and takes much greater risks of being discovered than the ordinary criminal.

He shows the most execrable judgment about attaining what one might presume to be his ends, throwing away excellent opportunities. He seems unable to profit

by experiences, however chastening these may have been. Punishment does not seem to affect him.

The psychopathic personality is also distinguished by a vast egocentricity; he seems to be marked by an incapacity for object-love of any deep or real type. In these and other ways he demonstrates poverty of affect. There may be a readiness of expression of feeling, but there is no normal strength to his feelings. By some criteria his insight would seem to be intact; but in a very special sense he lacks insight to a degree that is seldom found in any other disorder. He shows little of the ordinary responsiveness to special considerations or kindness, no reactions of appreciation except apparently superficial protestations.

Alcohol is very frequently prominent in the life story of the psychopathic personality. (As we have hinted above, the fantastic behavior described by Cleckley, mainly brought about by indulgence in alcohol, seems to be a marked feature of his series of cases.) The sex life invariably shows peculiarities, our author maintains, although he has seen little evidences of frank homosexuality or perverted tendencies. Cleckley, in contrast to the reviewer's experience, has observed no successful attempts at suicide or any that he considered sincere.

While the psychopathic personality seems to go out of his way to make a failure of his life, he "shows a striking inability to follow any sort of life plan consistently whether it be one regarded as good or evil." Considering a longitudinal section of his life, one gets such an impression of "gratuitous folly and nonsensical activity in such massive accumulation that it is hard to avoid the conclusion that here is true madness."

It is to be hoped that this short review will serve to show that Dr. Cleckley's book is an immensely interesting attempt, as he modestly terms it, to restate the facts and re-open the discussion about psychopathic personalities—and that he does not minimize the difficulty which such discussion presents.

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OBJECTIVE AND EXPERIMENTAL PSYCHIATRY (2nd Edition). By D. Ewen Cameron.
New York: Macmillan, 1941. Pp. vii+390.

This textbook of psychiatry is as different and far removed from most other of present day psychiatrics as a text of physics is from a text of engineering. Most psychiatric treatises are either systematic presentations of the causes, description, and treatment of the various forms of nervous and mental disease, or they are formulations, usually psychoanalytic, of the disorders in the mental life of the individual. This book is neither. There is no mention of therapy as such; no mention of conscious or unconscious states; no libido; no description of the disease syndrome; no case histories; and no dynamic psychology. And they are none of them missed.

In place of the usual and expected subject-matter, we have chapter headings such as these: "Experimentation in general," "The function of conditioning," "Facilitative functions," "Electrical phenomena," "Oxidative functions," "Endocrine and vitamin function," "Heredity," and so on. The chapter on "Personality functions" never mentions instinct, death wish, defense mechanisms, anxiety, or Super-Ego manifestations. Rather, Terman's work on gifted children, introversion-extroversion as measured by the various questionnaires, the findings obtained from numerous neurotic inventories, factor analysis, and masculinity-femininity as studied by the questionnaire method make up the subheadings and text.

Indeed this book is in one sense a blending of the experimental findings of neurophysiology, biochemistry, experimental psychology, and endocrinology, as they exist in the normal organism and as they are found to be disordered (or not) in dementia praecox, manic depressive insanity, senile dementia, epilepsy, and feeble-mindedness.

To the bewildered scientist who has been purged by the cathartic methods of psychoanalysis and traumatized by the dynamic Id, this book seems like a return to sanity. Here one finds the kind of reporting common in internal medicine, bacteriology, or experimental (not dynamic) psychology. Here for once the labors of the experimental scientist, including the psychologist, are included in a *psychiatry*, and one written by an M.D. who has actually read and evaluated scientific and experimental studies carried out on psychopathological patients. Furthermore, the experimental evaluation is not "clarified" by life histories, astounding individual records, or symbolic equivalents. The term "sex" does not even appear in the index, and when it is mentioned in the text it is in relation to the endocrines or the autonomic system.

When I had the pleasure of reading the first edition of this book, I had the distinct feeling that Cameron was at least fifty years ahead of his time. I was wrong. In five years we have a second edition. To one acquainted with the psychiatric literature and psychiatry textbooks, it seemed inconceivable that even a modest printing of a first edition would be sold out in five years. But evidently there are scientists, experimentalists, and teachers to whom facts still have a fascination and who still give more than lip-service to the experimental method. To all such, this text is addressed and by all such it will be appreciated.

To some degree the experimental scientist may be disappointed by this book, feeling that it should be even better than it is. Cameron reports only partially the literature taken up in each of his chapter headings. He neglects certain crucial experimental papers on some subjects. He cites from secondary sources. Misspellings of names occur, viz., Lungfeld for Langfeld; Jacobsen for Jacobson; Walker for Waller. Bibliographic citations are varied in form, abbreviation, and style. Indeed one has the impression that Dr. Cameron wrote and revised this text under pressure and without the best of library facilities. But after all, these are minor criticisms.

The book stands in this second edition as a systematic presentation demonstrating clearly and conclusively that the scientific method can be applied to the problems of psychopathology—a fact known some years ago, but somehow only occasionally remembered since the *Interpretation of Dreams* made much of psychiatry a mad artistic speculation.

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BASIC PROBLEMS OF BEHAVIOR. By Mandel Sherman. New York: Longmans, Green, 1941. Pp. 440.

PERSONAL PROBLEMS OF EVERYDAY LIFE. By Lee Edward Travis and Dorothy Walter Baruch. New York: Appleton-Century Company, 1941. Pp. 421.

If books on problems of behavior were arranged on a scale with the most popular at one end and the most erudite at the other, *Basic Problems of Behavior* would be placed near the latter end of the scale. Above it would be placed only those creative summaries of investigations which are more adequate because they deal intensively with a limited part of the field.

Dr. Sherman's book is characterized first of all by its scope. The author brings to bear upon problems of behavior clinical and experimental evidence gathered from the fields of psychology, psychiatry, physiology, sociology, and anthropology. Thus the influence of environment as well as the predispositions of the individual is considered. By means of the genetic approach, origins of behavior problems are traced. The problems are then interpreted in the light of psychological theory and illustrated with brief case studies.

The second characteristic is a certain pervasive emphasis on the importance, but not on the pathology of conflict. Emotion is shown to arise out of frustrating experiences. "Motivation to excel, to be superior, to master situations, is probably the result of conflicts . . ." (p. 71). "Personality is determined by the methods the individual utilizes in meeting or solving his conflicts" (p. 113). "The most valid method of defining and studying the process of personality formation is through an investigation of the individual's conflicts" (p. 113); the mechanisms of adjustment, to which a chapter is devoted, are shown to operate with respect to conflicts; "the emotional tension which accompanies the conflict determines to a large degree the strength of the attitude and therefore its persistence" (p. 252). Similarly the influence of conflict on delinquent behavior, on the neuroses, and on mental abnormalities is described in detail and a chapter is devoted specifically to conflicts. Obviously this is a "conflict-centered" treatment of the subject.

The third general characteristic of the book is an impersonal and critical presentation of data with little attempt on the part of the author to summarize at the end of a chapter, or to resolve divergent points of view. For mature students this method of presentation is sound. Given a "Gestalt" of the subject as a whole, and many facts with which to think, they are motivated to make their own synthesis and to read more intensively in order to fill in or brighten weak or dim portions of the configuration. In other words, the reader is stimulated to think; he is not merely told what to think.

With the exception of the last three chapters, the book is organized around factors involved in basic problems of behavior rather than around specific kinds of problems. These factors have already been mentioned and one chapter is devoted to each—"The emotions," "Motivation and frustration," "Theories of personality," "Common mechanisms of adjustment," "The measurement of personality," "Attitudes," and "Conflicts." The last three chapters deal with the most deep-seated and resistant problems of behavior—"Delinquent behavior," "The neuroses," and "Mental abnormalities." A topical organization of this kind has the advantage of the logical and systematic study of the subject, but the disadvantage of being one step removed from the realities with which teachers and personnel workers have to deal. Notwithstanding, this book is of great value to these groups in building a background for understanding the persons with whom they have daily contact.

Because of the scope of the book, selection of references obviously had to be carefully made. However, several references were omitted which the reviewer expected to find. Cantril's experimental work on general and specific attitudes and Sheriff's *Psychology of Social Norms* represented points of view that deserved more attention. Sheldon's recent attempt to appraise physique (*The Varieties of Human Physique*) might have replaced the 1927 article quoted.

The monograph on *The Assessment of Psychological Qualities by Verbal Methods* by P. E. Vernon is a survey of attitude tests, rating scales, and personality questionnaires which includes the kind of original and constructive interpretation which might well have been included in the chapter on "The measurement of personality." In the same chapter, a reference or two on the "projective techniques,"

emphasizing their underlying principle of evoking the subject's response to a comparatively "unstructured" situation, would have made the description of the best known of these techniques, the Rorschach test, more meaningful.

In the chapter on "Theories of personality" Allport's more recent terminology of *personality tendencies*, instead of *personality traits*, would have better represented his view of personality defined as "the dynamic organization within the individual of those psycho-physical systems that determine his unique adjustments to his environment."

These omissions, however, are more than balanced by the scope of the material presented, and by the interpretation based on the author's own clinical and research experience. The many students who will read *Basic Problems of Behavior* can readily supplement the core material with current, relevant references.

Personal Problems of Everyday Life would find a place near the opposite end of the scale suggested in the previous review. It is an extremely popular treatment of the same subject, characterized, as the title implies, by its practical approach. It addresses itself intimately to the reader, as in the following quotation which represents, in general, the style of the book:

"By rest cures we clear time to remember. By trying to forget, we remember more. We cannot run away from trouble. Trouble lies within. Wherever we go, we take it with us. *We* are the trouble. We cannot escape ourselves."

"Don't be too introspective" is another handy bit of advice that is given in abundance. 'If you keep thinking about yourself, you'll get morbid.' And so we are deterred from doing the only thing that can possibly help. Unless we do think about ourselves, we can never know anything about the source of our troubles" (p. 15). This quotation not only illustrates the style in which the book is written but also its anecdotal and prescriptive nature and the kind of inaccuracy that results from over-simplification.

The book is divided into three parts. The first part is entitled "Some basic ideas about how we live our lives." In this part are included such headings as "The importance of living," "Why suffer in vain," "Some common ills," "What makes living hard." The second part deals with "Particular problems to be met" in childhood, adolescence, and adulthood, "Sounding off soundly," "The gangster will out," "Bugaboos and nightmares," "Who wears the pants?" "Parents are still people," "Let's be more selfish." The third part is concerned with "What to do," "Put troubles in reverse," "The golden rule—psychological version," "Toward a better life."

Important as is the task of implementing established principles of mental hygiene, the difficulties and dangers must be recognized. It is impossible to reduce the complexity and uniqueness of human behavior to catchy phrases, general "norms," or specific prescriptions.

RUTH STRANG.

Columbia University.

THE ADOLESCENT PERSONALITY. By Peter Blos. New York: D. Appleton-Century, 1941. Pp. xiii+509.

Peter Blos' discussion of the *Adolescent Personality* is centered around four case histories. The case studies were selected from among a number collected by the Adolescent Study Staff of the Secondary School Curriculum of the Progressive Education Association.

The author's procedure is expressed in these words: "The developmental approach to personality is similar to the approach taken by the interpreter of

current affairs, who also views the happenings of the day as an outcome of slow historical processes as well as a reaction to acute situations." The case study seems to him to be best adapted to the purpose of illustrating the point of view that an individual's reaction to a situation depends not only upon the total situation but also upon the characteristics of the reacting organism

The first two case histories to be presented are those of a high-school girl and boy, "Betty" and "Paul." These two young people were selected not because they were problem cases but because they illustrate some of the problems of normal adolescents. For example, Betty is described as a girl who feels insecure in the family situation and who exhibits uncertainties about accepting her feminine role. She reacts to her difficulties by withdrawing, by being indecisive and ambivalent, and by centralizing her psychological and emotional problems around a slight physical defect. While the author emphasizes the fact that this particular combination of problems and behavior are unique for Betty, he also stresses the point that similar motivating forces and ways of reacting are found in many other individuals though perhaps in different combinations.

Three sources of data are drawn upon by the author to document his life histories: the interview, the self-expressive material, and the observational records.

One of these sources, the "free conversational interview," provides verbatim reports of interviews with adolescents. These are the outstanding features of the book. The youngsters were encouraged to talk freely, following their own leads, and thus were enabled to disclose their problems, opinions, attitudes, fantasies, and goals. In regard to this interview data, not all will agree with the writer when he says, "... the data do not speak for themselves. They must be translated and interpreted in order to provide insight into the personal meanings which so pervasively influence the individual." To fit the meaning of the data into the author's system of thinking, perhaps they need interpretation. Many psychologists might prefer the reports without the author's comments, since they offer eloquent suggestions for a number of alternative interpretations. It would be helpful if the reader could be given more information concerning the principles and procedures which were followed by the staff members who did the interviewing.

In the author's treatment of the "self-expressive material," original compositions, stories and poems, he "reads between the lines" in relating the creative writing to other information about the individual. A little of this sounds like fortune telling to the uninitiated, as, for example, when Betty's literary efforts are described in part as expressing "a state of inner combat in which divergent tendencies are at work and lead unavoidably to failure and defeat." However, the kinds of compositions written by Betty and Paul are available for most students and it is instructive to follow the author's method of using them as clues for understanding behavior.

The third source of data, termed "observational," is largely comments by teachers, but contains some reports on health and some original compositions from earlier grades. On the whole these records are not as valuable for understanding behavior as the interviews and self-expressive material, but they provide the only objective information about the individual over the whole period of his school history.

The author's problem, apparently, was to synthesize the available information on four cases, presumably unknown to him, and to interpret these in such a way as to make them serviceable to educators. In a study which follows the same individuals over a period of years (in this case two or three) and which uses qualitative methods almost entirely, it becomes a task to handle the bulk of material which quickly accumulates. This aspect of his problem Dr. Blos refers to as the "often painfully abundant documentation."

The author has quite successfully edited and organized the data so as to present a consistent picture of the specific problems of each of the four individuals and the methods each used in reacting to these problems. The youths themselves could scarcely be said to come alive in the pages of the book, with the possible exception of Paul, a bright young Jewish boy who "intellectualized" his conflicts.

The material for each case is organized under as many of the following ten headings as are appropriate: Adults, Boys, Girls, Physical Development, Self, Adulthood and Vocations, Intellectual Interests, Self-expressive Activities, Standards and Religion.

The interpretations of each section of the data indicate how it is possible to go about interrelating isolated bits of information by what the author calls the organismic conception of personality. "Through this approach," says the author, "it becomes possible to organize the many factors involved in a case and ultimately to relate them in their dynamic interaction." This is a laudable goal of the author's, but it has not been attained in regard to these four case histories and would scarcely seem to be attainable with our present tools for acquiring and interpreting knowledge about the individual.

Between the first two case histories of young adolescents who were in high school and the second two of older N.Y.A. youths, the author has contributed a section called "Theory of adolescent development." This section considers in general terms the "Sources of strain and conflict during adolescence," "Typical adolescent behavior in response to strain," "The influence of early experiences upon adolescent development," and, finally, "A concept of adolescent adjustment." Throughout, the author emphasizes the importance of studying the individual case in order to illustrate the dynamics of behavior which are functioning during this period when the adolescent's adjustment "is in a state of flux."

In discussing the case-history approach, the author writes, "The individual is not a conglomeration of traits but a functioning totality, and an understanding of the whole is a prerequisite to a proper evaluation of any selected detail."

The reader is occasionally confused by the author's attempts to describe the behavior of one of these individuals as a "functioning totality." On the other hand, some of the most successful passages are those in which a restricted area has been selected for discussion. For example, Paul's use of "thinking as a protective device"—"to settle problems, to intellectualize impulses, to objectify fear, to discharge aggression, in general to restore emotional balance"—is carefully and convincingly treated.

Although the author may not have accomplished as much as he wished by way of reaching "generalizations about the underlying features of development," he does direct the attention of the reader to the fact that there are underlying motives to individual behavior, which, if recognized, will facilitate the task of education.

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SOCIAL PSYCHOLOGY OF MODERN LIFE. By Steuart Henderson Britt. New York: Farrar & Rinehart, 1941. Pp. xviii+562.

The area of agreement among writers regarding material to be included in texts in physics, chemistry, biology, and the other "natural" sciences is well marked. In some of the "social" sciences there is fair agreement, though not in all. But in psychology, especially in the newer fields, the area covered by one text may be quite different from that of another. Being thus at the frontier, writers must

adopt more or less personal criteria for judging what to include, what to exclude. A knowledge of the criteria used will often tell prospective readers more about a social psychology text, for instance, than several pages of detailed review.

In *Social Psychology of Modern Life*, Steuart Henderson Britt states clearly his criteria: "Three objectives are stressed in this book: (1) As a social psychology it is written for students of sociology, students of psychology, and interested laymen. (2) The social psychology of modern everyday life is emphasized rather than abstract theoretical problems. (3) Experimental and observational materials are introduced on every topic, especially those which throw the most light on problems of human interrelations in the United States" (p. vii).

Throughout the book students will be presented with problems confronting them as *present members of a culture in the process of social change*. The movies they see (Donald Duck, Mickey Mouse), the radio programs they hear (Fred Allen, Jack Benny), the speakers they are influenced by (Father Coughlin, Winston Churchill, Herbert Hoover, Roosevelt, both Mr. and Mrs.), the cults and organizations they may or may not belong to (*I Am*, fraternities and clubs, 52 references in the index for the latter), the legislation which affects them (lend-lease bill), the magazines and books they see at the drug store (*Omnibooks*, *Reader's Digest*), and the "funnies" they read (Sadie Hawkins, Superman), are all woven into this well-organized account of present-day social living.

But the fact that present problems are stressed does not mean that Dr. Britt has "watered" his text in an attempt to make it palatable to people limited by the Sunday comics. A 44-page appendix of "literature cited" gives references to F. H. and G. W. Allport, Cantril, Dewey, Terman, Hartshorne and May, R. A. Fisher, Guilford, Lois B. and Gardner Murphy, Clark Wissler, Klineberg, Malinowski, Mead, Farnsworth, J. F. Brown, etc.

Two sections particularly impressed the reviewer. One of the chapters in "The social psychology of institutions" is "Education—the school." After pointing out the extent of education ["Education is the biggest business in the United States. Nearly one-third of the total population is engaged in education: as pupils, teachers, other instructional staff, custodial and other employees, administrators, and suppliers of goods and services to the schools" (p. 338)] and the "confusion of aims," three principal reasons for going to college are mentioned: "(1) the 'bread-and-butter' purpose, (2) the 'superkindergarten' purpose, and (3) the 'knowledge' purpose."

Following a discussion of education from the point of view of the student there is a section devoted to education from the point of view of the teacher. Many of us in high schools and colleges might do well to ponder on the fact that we serve not two masters, but five: pupils, parents, boards of education or trustees, administrators, and the community.

The second section of particular relevance involves a 12-page discussion of "psychological aspects of World War II." Nine psychological processes are utilized by Hitler in "order to keep the people strongly nationalistic and war-minded": custom, simplification, frustration, anxiety, reinforcement, association, universals, identification, and rationalization (pp. 475 ff.).

Social life today is greatly affected by our factories, our highly technological means of producing food, shelter, and clothing. It thus seems nothing short of amazing that Dr. Britt includes so little about the psychological factors arising directly from the modern factory system. This lack, it seems to the reviewer, is the only serious one. And it certainly is not a lack growing out of a dearth of information, since a good many important studies have recently been published. Among the most recent is *Management and the Worker*, by F. J. Roethlisberger and W. J. Dickson, which describes the now-famous experiment at the Hawthorne

plant of the Western Electric Company. This particular book is not mentioned, nor are any of the other reports of that experiment.

From the practical standpoint of teaching, *Social Psychology of Modern Life* has several commendable features. It is copiously illustrated. Each chapter closes with a series of recommended readings and five to ten questions and problems for discussion. Besides the appendix mentioned above, there is a list of 47 texts in social psychology, a list of psychological, sociological, and allied journals, and references to dictionaries and encyclopedias.

Taken as a whole, *Social Psychology of Modern Life* seems to the present reviewer to be the outstanding text in social psychology published in the last four or five years.

ARNOLD THOMSEN.

Elmo Roper, Market Research.

PRINCIPLES OF ABNORMAL PSYCHOLOGY: THE DYNAMICS OF PSYCHIC ILLNESS. By A. H. Maslow and B. Mittelmann. New York: Harper, 1941. Pp. x+638. \$3.50.

Here is a textbook on abnormal psychology which turns out not to be primarily on psychiatry or on psychoanalysis or on static isolated functions, but actually on abnormal psychology. Because of this accomplishment and because of the emphasis on common principles rather than on the aggressive exposition of a divergent point of view, this volume by an academically trained psychologist and a medically trained psychiatrist represents a healthy development in psychology. The authors indicate their obvious indebtedness to the gestalt and the psychoanalytic groups in particular and to such trends in modern psychology and psychiatry as are represented by psychobiology and psychosomatics. The emphasis throughout is on the attempt to integrate these various views on meanings of symptoms, and on the motivating forces rather than the structural aspects of mental illness.

The presentation is divided into five major parts. The first is concerned with the definition and discussion of certain concepts which are used in the volume, such as abnormality, normality, tension, and adjustment. In the second part, entitled "Psychodynamic processes," unconscious activities, the nature of conflict, frustration and its effects, disturbances of environmental and self-evaluation, means of coping with distress, experimentally produced behavior disturbances, and the precipitation and maintenance of mental illness are considered. Part 3, on the "Etiology of psychopathology," evaluates the variety of factors which may play a role in psychic illness: genetic, constitutional, environmental. In the fourth part, "Psychotherapy," the aims and nature of this form of therapy and its techniques are discussed, with special attention given to suggestion, hypnosis, and the psychoanalytic types. The last part presents the various "Symptom syndromes." In it the types of mental disturbance are treated not by the conventional diagnostic classificatory system but rather according to predominant reaction type. A bibliography, glossary, two appendices, one on projective methods and the other on the statistical aspects of mental disease, and an index complete the volume.

From the very beginning the reader experiences a feeling of easy and comfortable progress. The non-militant eclecticism is smoothly accomplished and conveyed without too many obvious signs of "learning." The psychoanalysis, which the authors apparently accept as fairly basic, is well-digested and largely implicit, appearing not at all in the bristly form in which it has at times been presented. The book is permeated with an atmosphere of contact with and interest in people rather than the exposition of case records—an atmosphere of a

human, live, consulting-room in which patients have been worked with directly and listened to sympathetically, rather than the presentation of second-to-fourth-hand-me-down cases with which we have so frequently been regaled in textbooks of abnormal psychology. Their starting of the very first chapter with a case report (returned to repeatedly in relation to various topics) sets the tone for the whole book. Their emphasis on the concrete and on the everydayness of symptoms, as well as the effective acceptance of different points of view, should go far towards really bringing home to the elementary student the oft-repeated but only rarely accepted dictum that normality and abnormality overlap considerably.

It should be pointed out that the emphasis is placed quite heavily, perhaps too heavily, on the socio-cultural factors. Although reference is made to somatic factors, it is in the direction of *psychosomatics* rather than that of *somatopsychics*. Despite the legitimacy of such a criticism, the present reviewer is not too profoundly disturbed by the emphasis. It is probably expecting the impossible at this stage of the reorganization of points of view in psychology to get from any one volume an adequate, entirely rounded, picture. The fact that the authors have done such a satisfactory job in presenting in elementary manner the socio-cultural point of view makes it not overly difficult to forgive their stress on this approach. This point of view, in the present stage of our knowledge, seems to offer a good deal more promise than the narrowly biological because of the constructive effect it has on our thinking about therapy and in making us cognizant of the complexity of the ramifications of personal factors with the innumerable aspects of the environment. Psychology proper can profitably go through a period of over-emphasis of this kind before coming to the stage of objective balancing of different points of view. The alert, impartial instructor will find many sources for supplementing the material offered in the book, and the organically minded instructor may, if so inclined, go so far as to use Moss and Hunt's text for supplementary reading.

To the reviewer the present text appears the most satisfactory single volume now available for use with introductory classes in abnormal psychology. For such groups, particularly, a broad social-cultural approach to psychopathology is the most desirable. Maslow and Mittelmann's book could very well be followed by Brown's *Psychodynamics of Abnormal Behavior*, a volume which can be recommended as highly adequate for advanced use but only with reservations as an elementary text. This latter work would to some extent supply the more conventional material, both psychological and somatic, and the more detailed expositions of specific points of view, such as those of psychoanalysis and topological psychology, missing in the Maslow-Mittelmann volume. These two texts, together with some supplementary readings, as already suggested, offer the basis for a course in abnormal psychology superior to anything heretofore available in existent texts.

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SOCIAL CASE RECORDS FROM PSYCHIATRIC CLINICS. By Charlotte Towle. Chicago: Univ. Chicago Press, 1941. \$3.00.

Miss Towle has performed a service to psychiatric social work and to other allied professions by gathering together the excellent teaching material which comprises this book. She has selected twelve case records from a variety of psychiatric clinics, and with a minimum of editing has set these records before us. While similar case compilations have been made before, the present collection has its major

advantage in being up-to-date, reflecting current therapeutic ideas. The records represent the raw material of case-work, and as such are excellent intellectual food for prospective psychologists and psychiatrists, as well as for the student social workers who constitute Miss Towle's primary audience. No one can read these records without raising many questions as to the types of approach used, commending the work here and criticizing it there. Lest students miss some of these questions, discussion notes are appended to each record, which raise, but do not answer, many of the issues involved in the case.

Most of the cases are of adolescent age or younger, though there are three young women included. Also, as is usual in any clinical effort, much of the actual case work in the children's cases is done with the parents. Because many of these cases come originally from hospital situations, more than half of the referrals are based on some "physical" symptom for which there is no organic basis. They might equally well, however, have been drawn from a school or court or agency setting, because the motivations are the familiar emotional patterns with which every case-worker and psychologist is familiar.

In a brief introduction, Miss Towle does an admirable job of summarizing the basic concepts underlying modern therapeutic approaches. Not only is her thinking sound and her expression clearcut, but the clinical wisdom which grows out of long experience with human beings is also evident. The varied treatment procedures, and the variety of treatment emphases in the selected cases, give force to her somewhat eclectic views on therapy.

Looking at the book from the viewpoint of a clinical psychologist, the reviewer has certain other observations to make. In the first place, the reader cannot but be impressed with the extent to which psychiatric case-work is an independent profession, which has ceased playing a secondary role. While both psychiatrists and psychologists participated in case conferences, it is significant that in six of the twelve cases the psychiatrist never interviewed the client. Not only is there this surprising lack of direct contact between psychiatrist and patient, but in those cases where there was direct contact one is impressed with the poor quality of psychiatric therapy. We find psychiatrists in their interviews making the following blunders: giving "frank reproof" to a patient; telling a mother to change her attitude, at the same time admitting in the record the futility of such an approach; promising a weekend at home to a boy in an institution if he improves his school work; personally giving a suit of old clothes (the psychiatrist's own) to a patient in the midst of treatment. We do not find such elementary errors in the efforts of the social workers. Indeed the impression is clear that leadership in the more subtle aspects of therapy may already have passed out of psychiatric hands.

The psychologist shows up in an equally poor light. Even making allowance for the restrictions placed on psychological practice in psychiatric clinics, the psychological reports are in all but one case psychometric reports only. One would gain the impression that the psychologist has no concept of the individual as a dynamic entity. Whether this lack is ascribed to the psychologist's training, or to the limited scope allowed him in professional practice, it is a serious situation demanding remedy.

This volume should have wide use in courses in case-work, clinical psychology, and, one hopes, clinical psychiatry. When it is matched with case-books in clinical psychology and psychiatry then we will have a better opportunity to see where the three professions are agreed and where they differ in their treatment practices and philosophies.

CARL R. ROGERS.

Ohio State University.

NATIONAL UNITY AND DISUNITY: THE NATION AS A BIO-SOCIAL ORGANISM. By G. K. Zipf. Bloomington, Ind.: Principia Press, 1941. Pp. xv+408.

Zipf's exegesis is founded on the law of urban concentration. This law states that the distribution of the communities in a nation may be described in terms of a harmonic series. That is to say, if the communities are ranked with respect to size, the second most populous will be half the size of the first, the third a third the size of the first, the fourth a fourth, and the n^{th} an n^{th} . When the communities of a nation fall precisely into a harmonic series, and when the distribution is plotted on doubly logarithmic paper, the resulting curve is a straight line with a slope of 1. The basic argument of the book is that the nature of the distribution is a barometer of the socio-economic unity and balance of a nation. When the curve is a straight line, Zipf says, the nation is in a state of sound health; departures from the ideal curve point to disequilibrium and disunity.

Although Zipf does not mention the fact, the law of urban concentration was apparently discovered some years ago by F. Auerbach. A. J. Lotka, in 1925, showed that the law applies to American communities. Thus Zipf, to some extent, is rattling old bones. But he rattles them energetically and thoroughly. He goes much further than the mere statement of the law, marshalling arguments from physics, chemistry, geology, geography, sociology, economics, and psychology, and fusing them reasonably into the notion that the harmonic series represents a balance and a unity. When goods are being made, distributed, and consumed with the greatest efficiency in a nation the communities of that nation will distribute themselves so that the second is half as large as the first, the third a third as large, and so on. This is the healthy and natural distribution. When this distribution is disturbed so that there is a preponderance of large cities or an over-abundance of small communities, the nation is not in a unified condition and we may expect nature to restore the balance.

Zipf cites census data from many countries and many eras to substantiate his thesis and to serve as the starting-point for interpretations of past and present social phenomena. The United States was becoming increasingly top-heavy in its socio-economic organization up until 1929, when a disturbance occurred and decentralization set in. Germany became a more unified socio-economic entity in 1939 when Austria and the Sudetenland were annexed; the curve of community distribution of the greater Germany of that year showed a close approximation to the ideal straight line. The British Empire is not in equilibrium since British exploitation has not succeeded in bringing "harmonic" unity among the various dependent groups. These and many other interpretations follow reasonably once we make the assumption that the distribution described in terms of the harmonic series is the distribution of a unified and balanced nation.

The major portion of the book is concerned with community-distributions as they bear upon the social-economic life of nations and groups of nations. But Zipf devotes one chapter to a consideration of the distribution of consumable goods and another to a treatment of "cultural drives." Throughout, the harmonic series plays a cardinal role as a descriptive device.

The book is of tremendous scope and may turn out to be of comparable importance. The approach to socio-economic phenomena, though not entirely new, will be new to most social scientists. A pleasing style makes the book readable, and the content makes it interesting, but there are many points that will evoke heated disagreement and many more that will puzzle the reader.

F. H. SANFORD.

Harvard University.

COLOR AND HUMAN NATURE: NEGRO PERSONALITY DEVELOPMENT IN A NORTHERN CITY. By W. Lloyd Warner, Buford H. Junker, and Walter A. Adams. Washington, D. C.: American Council on Education, 1941. Pp. xiv+296.

Everyone knows, of course, that personality development is influenced in various ways by conditions associated with socio-economic status. It is also a commonplace that certain aspects of individual physique are to be counted among the determinants of personality. But few investigators of such problems have reached very specific conclusions as to precise ways in which such factors commonly operate. The recent series of studies sponsored by the American Youth Commission on the development of Negro personality, of which this volume is one, provide a rich body of data pertinent to such problems, and fairly definite conclusions are drawn. It would not be unfair, in fact, to say that certain patterns of personality emerge as individuals are classified according to fairly objective criteria.

The conclusions are based upon sociological, psychological, and psychiatric analysis of data gathered concerning 805 individuals who are classified into 32 "types" according to sex, color (4 classifications), and class (4 classifications). The four classes (upper, upper-middle, lower-middle, lower) are each neatly described in terms of living conditions, most common occupations, dominant values, etc. Nowhere, however, is there a clear statement of a fixed criterion in terms of which a given individual is assigned to a given class. Classifications of color (dark, brown, light, passable) are made in terms of "descriptions by the several interviewers." Few readers, probably, will quarrel with the assignments of class and color given to the individuals whose cases are presented. The presumption is strong that the actual fixed criterion (if any) was the class or color role to which the individual was assigned by his own associates. At any rate such a procedure, while not flawless, is probably better suited to such an inquiry as this than any other; it is regrettable only in not being made explicit.

Three or four case histories, varying in length from one hundred to five thousand words, are presented for nearly all of the 32 types. These make up a very large part of the book. If each group of these cases, which together constitute some 10 per cent of the 805 cases, is fairly representative of the others in its group, considerable confidence may be placed in most of the generalizations which emerge. The following quotations are illustrative of these generalizations, though the supporting data which render them convincing (to the reviewer at least) are necessarily omitted.

Since "lightskin persons are by and large at the top of the scale (of class position), and darkskin individuals are at the bottom . . . an individual who differs from the majority about him at any level is at something of a disadvantage and likely to be either unduly retiring or overaggressive. Dark men in the upper class . . . are characteristically assertive, but the women are quiet and withdrawn. Light individuals in the lower class, on the other hand, show a marked tendency to follow 'shady' occupations if they do not retreat within themselves completely. . . . Brownskin persons appear on the whole to be the happiest group in the Chicago Negro society, inasmuch as they deviate less markedly from other people in that society than do individuals at either color extreme."

The significance of the study for general personality theory, as the reviewer sees it, is as follows: the possible roles which an individual can play are limited by the objective situation, *i.e.*, what is permitted in a given society to an individual of given sex, color, class, etc. Selection among these possible roles is further limited by the individual's view of his own actual and possible roles, his subjective role at a given moment being determined by his history of aspirations and successes in a given context. The context is primarily one of social status. Thus upper-class

brownskins are apt to see themselves as light, whereas those of lower class more commonly view themselves as dark. Certain patterns of personality are associated, roughly, with objective classifications according to color and class because of common habits of perceiving color and class differences in terms of hierarchies of desirability. Hence what might be referred to as the status aspects of personality are apt to be patterned according to the individual's combination of sex, color, and class. Color, in this society, is viewed as an immutable badge of status. The individual may accept his own badge, thankfully, ruefully, or casually; he may concentrate on striving for other tokens, either to validate or to compensate for his color badge; or he may find substitute personality devices to cover up his failure to validate or to compensate for his color badge. These Negro subjects are almost ideal for demonstrating the usefulness of the concepts of objective and subjective role for understanding important aspects of personality development.

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MASOCHISM IN MODERN MAN. By Theodor Reik. (Translated by Margaret H. Beigel and Gertrud M. Kurth.) New York: Farrar and Rinehart, 1941. Pp. vi+439.

The German original of the present book appeared in 1940 under the imprint of the Imago Publishing Company in London—a vicissitude of the war—and bore the more pithy though lyrical title "Aus Leiden Freuden." These words much better than the present English variant express the guiding thesis of the volume: masochism is to be understood psychologically as a detour in the path to pleasure. It represents a defiant submission, conditioned largely upon early experiences, in which pleasure, anticipated in fantasy, is finally achieved at a certain cost. All the key words in this paraphrase—defiance, submission, early conditioning, anticipatory fantasy—are vital ingredients of the argument.

In the introductory section the previous views of Freud on the present subject are outlined, particularly his division of the phenomena of masochism into moral, feminine, and erotogenic. Reik states that though the contribution of Freud was outstanding it still left the problem unsolved in essence. The followers of Freud have trodden the master's path too devoutly to see things afresh. For over a period of three decades Reik has attempted to glean from his psychoanalytic experience points of guidance and criticism of earlier formulations. Regarding Freud's contribution as prerequisites to his own, he begins his treatment with a discussion of the factor of suspense—the delay of gratification; the demonstrative or exhibitionistic feature; and the provocative factor—a not invariable aspect—according to which the masochist actually elicits punishment from others.

In the next section of the book the chief psychological theory is expounded. The essential core of masochism is found in anxiety, dating from early castration threats or other infantile dangers. To avoid these perils the individual makes a "flight forward" and anticipates what may happen by defiantly exposing himself to the very dangers he dreads. Occasionally these courted dangers are only symbolic substitutes of that which is feared; sometimes, however, they are identical with it. Tension is increased as anxiety multiplies itself by a crescendo of anticipations. But throughout the entire process is discernible the masochist's goal of pleasure which he seeks in his roundabout way merely because, consonant with his anxieties, it is the most economical. In cases which have been analyzed it is possible almost always to observe certain guiding fantasies of gratification which are the true end-situations of the subject. Hence to think of the masochist as desiring pain is completely fallacious. For like all other human beings, according to Reik, indi-

viduals of this character seek pleasure as their objective. Their peculiarity lies only in their need to decrease by anticipatory suffering the anxiety associated with gratification. Moreover, in their submission to suffering one finds a certain defiance—a defiance of the very sadistic authorities at the source of their anxiety; and this defiance betrays the identification of the masochist with the sadistic object of his dread. The bridge between sadism and masochism thus becomes evident.

These points and certain corollaries are elaborated throughout the next three sections of the book. In that entitled "Social forms" the author applies his views to the political, social, and religious problems of modern man. Thus the belief in immortality is interpreted as being based in part on willing submission to suffering in this world with the expectation of reward in a future one. The cultural implications of the theory—fully treated in the final section of the volume—include the view that the masochistic orientation while justifiable in so far as it represents the suppression of unbridled sadism may be carried to extremes and involve an excessive price at times.

The book is written in a somewhat discursive style. Its repetitiousness is recognized by the author himself (p. 399). It could probably have been compressed by half and, despite the sacrifice of certain felicities of expression and allusion, would, for psychological readers at any rate, undoubtedly have been more effective. However, for such readers the volume has a compensatory significance. By its emphasis upon the anticipatory reduction of anxiety-tension it directly ties in with such recent treatments of motivation as may be found in Mowrer's papers on expectancy and anxiety. Since Reik's views are couched in only mildly psychoanalytic terminology, it is more than likely that a psychologist with such a bent could readily reformulate the present contribution to the problem of masochism so that it would be highly acceptable even to experimentally oriented investigators.

SAUL ROSENZWEIG.

Worcester State Hospital.

THE CRIMINALITY OF YOUTH. By Thorsten Sellin. Philadelphia: American Law Institute, 1940. Pp. 116.

The American Law Institute, in drafting model laws to deal with the youthful criminal who has passed beyond the delinquent court age but who has not yet reached legal adulthood, decided to go after the elusive facts concerning the nature and frequency of the crimes of this age group. *The Criminality of Youth* is a condensation of voluminous statistical material submitted to the Institute's Advisory Committee on Criminal Justice.

The criminal law has always given special consideration to certain kinds of offenders. It will, for example, generally relax its vindictiveness to the point of complete forgiveness if it can be shown that the offender did not know the nature of the act or did not know that it was wrong. Similarly, children under seven are completely exonerated because of a common law presumption that they lack the necessary mental "faculties" out of which a criminal intent can be formed. After age seven such a presumption may be rebutted and a child might feel the full force of the punitive law, although in recent years the courts have played an increasingly paternalistic role when children over seven were arrested for criminalistic tendencies. Juvenile courts established throughout the country to deal with this age group are now commonplace. At the present time we are witnessing the gradual extension of this trend toward individualization, to include the group of youthful offenders above the juvenile court age. This age group has been on the conscience of the rest of us for some time. "Adolescent Courts" have already been established in a few jurisdictions, notably in Brooklyn and Chicago. The American Law

Institute is now suggesting that the law had better modify its severity towards these young men and women if it wishes to reduce the future crop of habitual offenders.

Dr. Sellin looks at this problem from the point of view of the expert in criminal statistics and does not speculate on the sociological or psychological implications of this new development. It is surprising how many definite conclusions he can draw when one considers the almost complete lack of uniformity in the reporting of offenses by age groups. Carefully pointing out the inadequacies of the data, the author does an excellent job of assembling and interpreting information from a wide variety of sources, including the German and the English. His monograph is of value, incidentally, in disposing of a number of current misconceptions. He does not find, for example, that the reckless young men between the ages of 16 and 20 are a particularly lawless lot. Nor is it true that most modern gun-men are drawn from this group. The group showing the highest ratios for robbery, the possession of deadly weapons, and sex offenses is a slightly older group (20-24), while those responsible for most of the homicides are adults in their late 20's. Even those arrested for minor offenses such as drunkenness, disorderly conduct, vagrancy, and traffic violations (and these comprise four-fifths of all legal transgressions) are found outside of this 16-20-year age group more frequently than one would expect statistically. What then are these youths charged with? Crimes against property (larceny, burglary, and auto thefts) occur relatively more frequently in this youthful group.

An interesting point made by the author is that this sort of stealing is "most conducive to the development of a habit of law breaking." How such habits develop is not explained. Perhaps the author is thinking of the common adage, "Once a thief always a thief." At least it can be said that these are the kinds of crimes recidivists and habitual criminals most frequently commit and for which they most frequently "do time." At any rate it is not difficult to believe that those who commence their stealing at an early age and are then subjected to our present machinery of criminal justice are those who are most likely to become habitual offenders. One can therefore agree with the author's conclusion that effective correctional treatment of these youthful offenders becomes of the utmost importance. Perhaps the future will provide some way of dealing effectively with these youths *before* criminal habits and attitudes are acquired.

EDWIN POWERS.

The Cambridge-Somerville Youth Study,
Cambridge, Massachusetts.

BORN THAT WAY. By E. R. Carlson. New York: John Day Publishing Co., Inc., 1941. Pp. vii+174.

The growing literature on cerebral birth palsy is materially augmented by this excellent autobiography of one of the medical leaders in this field. And the personal histories of "birth injured" persons who have attained superior levels of mental development and achievement, of which this account is the most recent, constitute an especially valuable segment of the literature on "spastics." Dr. Carlson's life story is especially valuable for its retrospective insight regarding his persistent struggle, because he represents both patient and doctor in one person. This revealing record of his experiences, handicaps, strivings, and achievements will encourage many similarly affected through the warm sympathy and intimate knowledge of one who not only was "born that way" but has also grown up that way and is now devoting effective effort to assisting others.

Aside from the interest attaching to this duality of "case" and therapist, psychological attention centers on the implications relating to mental maturation and

emotional adjustment of the physically handicapped individual to his social environment. Compared with already published similar biographies and autobiographies this book adds important light to the sex differences in this group of patients in relation to their personality development. Such histories reveal the manner and degree of success with which the mentally normal person can rise above a severe congenital physical affliction through "rugged individualism." The reader also will gain much from a careful analysis of vocabulary, diction, style, and other aspects of linguistic development which in the face of grave motor obstacles to the development of thought and communication have important implications for motor theories of consciousness.

The author's straightforward formulation is strengthened by the candor and objectivity with which he relates his life experiences. To his already extraordinary attainment in the face of apparently insurmountable difficulties we must add the inspiration afforded to others of like state as well as to their parents, teachers, physicians, and other mentors which this book affords. And it may not be out of place here to acknowledge a deep indebtedness to Dr. Carlson while still at Princeton for the early impetus given by him to work in this field by the Vineland Laboratory.

EDGAR A. DOLL.

The Training School,
Vineland, New Jersey.

PSYCHOTHERAPY. By Lewellys F. Barker. New York: Appleton-Century, 1940.
Pp. ix+218.

This book presents a survey of psychotherapy in small compass. To some it will appeal as well-rounded; others may be put off by its eclectic conservatism. Beginning with a definition of psychotherapy as "treatment that attempts to improve the condition of the human being by means of influences that are brought to bear upon his mind (psyche)," it goes on to emphasize the importance of a comprehensive diagnostic study of the individual as a basis for planning adequate treatment. Both the heredity and environment of the patient must be carefully investigated; outstanding liabilities and assets evaluated. The methods of psychotherapy are then considered briefly in turn. These include suggestion and hypnotism; persuasion and medical moralization; rest and isolation; psychoanalysis, including the Freudian form as well as such variants as Janet's "psychological analysis," Adler's "individual psychology," Jung's "analytical psychology," Rank's and Stekel's respective procedures, and Meyer's "distributive analysis and synthesis." Then follows a brief discussion of methods depending upon the education, excitation or guidance of the patient, *e.g.*, work cures, and certain less reputable forms of treatment such as modern spiritualism.

The next main section of the book is devoted to a discussion of psychotherapy of the so-called "organic" diseases and of the various functional disorders. (To the latter the Meyerian names are occasionally appended.) The survey is completed by considering psychotherapy at the various ages of life from childhood to old age. In a final chapter an attempt is made to forecast the future of psychotherapy. A comprehensive glossary and fairly detailed bibliography conclude the volume.

While on the whole representing a broad orientation towards its subject-matter, this book clearly aligns itself with Adolf Meyer's methods of distributive analysis and synthesis. This approach is embraced because it studies the patient as a whole and attempts to utilize all available aids in his diagnosis and treatment. The author believes that such a program is especially valuable because it can be used "by any intelligent general practitioner who will call upon specialists for aid in

case of need" and points out that it represents "the kind of practice for which I have appealed during the last forty years" (p. 63). Coupled with this position is the author's faith in possible chemotherapy as a substitute for psychotherapy in the future. It is thus easy to appreciate his apparent lack of sympathy for certain aspects of psychodynamic theory and psychoanalysis.

SAUL ROSENZWEIG.

Worcester State Hospital.

GENERAL PSYCHOLOGY. By Raymond B. Cattell. Cambridge, Mass.: Sci-Art Publishers, 1941. Pp. 624.

GENERAL PSYCHOLOGY. By Wayland F. Vaughan. (Revised edition.) New York: Doubleday, Doran, 1939. Pp. xxi+754.

THE PSYCHOLOGY OF NORMAL PEOPLE. By Joseph Tiffin, Frederic B. Knight, and Charles Conant Josey. Boston: D. C. Heath. Pp. xv+512.

Reflecting a growing tendency among textbook writers, these three authors unanimously agree that their texts are intended both to "sell" psychology to the college student and to make it practically useful to him. The contents are carefully chosen to be interesting and attractive as well as useful and informative. The use of jokes, cartoons, and a popularized style of exposition is a feature of each of the texts.

Cattell's *General Psychology* is unusually successful in presenting an integrated exposition. The first ten chapters, for example, cover the diverse fields of individual differences, motivation, and personality, but in spite of their diversity they form a continuous presentation of a theory of personality. The rest of the book is equally well integrated and gives an impression of continuity sadly lacking in many texts.

The reviewer would find two faults with the otherwise excellent text. In the chapter on motivation, the author devotes considerable space to a terminological discussion, finally using his own terminology which is unfamiliar to the average reader. Laudable as is the attempt to systematize psychological terminology, in an elementary text it is likely to confuse the student who is unfamiliar with the historical issues. Another defect is the author's rather dogmatic treatment of certain controversial issues (e.g., his evaluation of the alternative approaches to factor analysis). While a positive point of view is a boon to the student, it is misleading to state that some point of view is "the most satisfactory" when it is still very controversial.

Vaughan's text, a revision of an earlier publication, is a more orthodox, traditional treatment of the subject matter of psychology. It is a long, 750-page text packed with factual information. In his attempt to include all the features of the traditional course in elementary psychology, the author perhaps presents too much material. Elimination of some of it might improve the text. The author makes excellent use of diagrams, cartoons, and illustrations which dovetail so well with the textual discussion that they really contribute to the student's understanding rather than distract his attention.

The third text, by Tiffin, Knight, and Josey, because of its emphasis on the applications of psychology, seems particularly well adapted for students of engineering, business, or other professional courses. Before they selected material for the text, the authors solicited the advice of college alumni in the business and professional world who would know from experience what features of college psychology are useful in practical affairs. For the student contemplating a more extensive study of psychology, the text is perhaps not so well suited, although the supple-

mentary reading suggested in each chapter would provide an excellent foundation for advanced study. A work book containing questions on each chapter and occasional reviews is available.

ALFRED L. BALDWIN.

Fels Research Institute,
Antioch College.

FEEDING OUR OLD FASHIONED CHILDREN. By C. Anderson Aldrich and Mary M. Aldrich. New York: Macmillan, 1941. Pp. vii+112.

Eating is a normal biological process that the human child shares with the entire animal kingdom, for the adequate functioning of which he is equipped at birth; unregimented hunger rhythms and unperverted appetites are the adequate gauge for his satisfactory nutrition. Such is the theme of this little book, a theme that is merely one of common sense but one that has been so violated in feeding practices with children over the past two decades as to have required underwriting it with scientific research. In attempting to present this essentially biological message to a generation that is more sophisticated about the functioning of its automobiles than of its own bodies the authors now and then lapse into the analogy of the machine. Chapter III, which deals with the appetite, is entitled "The carburetor." Such deviation from the task of educating parents to the acceptance of the fact that nutrition is a normal self-regulatory physiological process seems unfortunate.

Indeed the parents' emotional acceptance of this point of view is perhaps more important than an intellectual conviction of its truth. "Enthusiastic breast feeding is the foundation of any natural eating program," the authors say on page 74; they do not specify who is to furnish the enthusiasm, but imply it is the infant who provides it through the mechanism of hunger. They sidestep the issue that breast feeding fails unless the mother likewise is enthusiastic or complacently willing to breast feed her baby. And they ignore the fact that her enthusiasm depends largely upon her emotional acceptance of the fact of mammalian motherhood, *i.e.*, that she is adequately equipped to perform the function of nourishing her infant. But on the whole this is a thoroughly readable and entirely practical treatise on feeding young children.

The wisdom of the things said is almost surpassed by the wisdom of the things unsaid. The authors call upon the work of Gesell and Ilg on feeding behavior and that of Clara Davis on self-selection of diets to back up their plea for promoting good feeding habits and good nutrition in children by allowing the physiological feeding responses to develop as nature intended they should. But, since the book is meant for parents, they have wisely refrained from quoting research at length or documenting their statements with footnotes. Although they place a good share of the blame for the current prevalence of feeding problems on the routines imposed by pediatricians, the dietary standards imposed by nutritionists, and the height-weight tables unwisely used by educators, they are careful not to put their criticisms in such a way as to alienate these professional groups. They refrain from offering formulae, rules, and dietary suggestions, thus leaving the local pediatrician and the local woman's page editor full scope for their talents. They suggest mental hygiene treatment as a last resort for the child with a deep-seated feeding problem; and, although they make it clear that in most cases the mother herself builds feeding disorders into her child, yet their approach is a positive one, aimed at prevention rather than cure. Hence even the mother of a feeding problem can read the book without being overcome with guilt over her own failure.

MARY SHIRLEY.

Smith College School of Social Work.

GREAT EXPERIMENTS IN PSYCHOLOGY. (Revised Edition.) By Henry E. Garrett.
New York: Appleton-Century, 1941. Pp. xxi+452.

This is a thorough revision of Garrett's justly popular text. The older chapters have been extensively reorganized and rewritten with the inclusion of much new material. The improvement is particularly evident in the chapter on "Gestalt psychology." A new chapter on "The experimental approach to the study of personality" has been added. The bibliography is much more extensive. Moreover, even where substantial sections have been incorporated without major changes from the original form, Garrett has rewritten the material carefully with many changes in phrasing, grammar, and sentence structure to make the text clearer and more readable. The result is an outstanding example of painstaking revision. *Great Experiments in Psychology* has already proven its worth as a supplementary text in psychology. This new edition should be even more valuable to the student.

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WILLIAM A. HUNT.

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NEW BOOKS RECEIVED

- BARKER, ROGER; DEMBO, TAMARA, & LEWIN, KURT. *Frustration and regression: an experiment with young children*. Iowa City: University of Iowa Press, 1941. Pp. xv+314.
- BRADLEY, PHILLIPS. (Editor for the Committee on Materials for Teachers in International Relations.) *American isolation reconsidered*. Washington, D. C.: American Council on Education, 1941. Pp. v+208. Price 50¢.
- BRADLEY, PHILLIPS. (Editor for the Committee on Materials for Teachers in International Relations.) *The teacher and international relations*. Washington, D. C.: American Council on Education, 1941. Pp. 19. Price 10¢.
- CANTRIL, HADLEY. *The psychology of social movements*. New York: Wiley, 1941. Pp. xiv+270. Price \$2.75.
- CASE, VIRGINIA. *Your personality—introvert or extravert?* New York: Macmillan, 1941. Pp. vii+270. Price \$2.50.
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- ZUBIN, JOSEPH, & THOMPSON, JANE. *Sorting tests in relation to drug therapy in schizophrenia*. Ann Arbor, Mich.: Edwards Brothers, 1941. Pp. 23.

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HITLER, THE MAN—NOTES FOR A CASE HISTORY

BY W. H. D. VERNON

Harvard University

THE purpose of this paper is to bring together in brief form what is known about Adolf Hitler as a man. For if allied strategists could peer "inside Hitler" and adapt their strategy to what they find there, it is likely that the winning of the war would be speeded. It must be admitted, to begin with, that the intricacies of so complex a personality would be difficult enough to unravel were the subject present and cooperating in the task. But there are two further difficulties to be faced. One must attempt both to select out of the great mass of material which has been written about Hitler that which appears to be objective reporting and then further to reconstruct his personality on the basis of this very inadequate psychological data. We have, of course, as primary source material, Hitler's own writings and speeches and these tell us a good deal. Though we must admit, therefore, at its beginning that the nature of our analysis is very tentative and that in many instances only imperfect proof can be given for the inferences which are drawn, it is no more tentative than the psychological pen pictures which the Nazis themselves have found so useful (3).

HITLER'S ORIGINS AND EARLY LIFE

In any case study one must begin by asking who the subject is, whence he came, who were his forbears. Heiden (8) presents the most reliable genealogy available. Here we note only certain important points.

Hitler's father, Alois, was born the illegitimate son of Maria Anna Schicklgruber in 1837 in the village of Spital. He was supposed to be the son of Johann Georg Hiedler. However, to his fortieth year,¹ Alois bore the name of his mother Schicklgruber. Only then, when Georg Hiedler was (if still alive)² eighty-five years of age, and thirty-five years after the death of his mother, did he take the name Hitler, the maiden name of his mother-in-law.

¹ January 6, 1877.

² There seems to be no record of his death.

As Heiden says, "In the life history of Adolf Hitler no mention is ever made of the grandparents on his father's side. The details invariably refer only to his mother's relations. There are many things to suggest that Adolf Hitler's grandfather was not Johann Georg Hiedler, but an unknown man" (8, 8). The ancestors on both sides of the family were peasant people of the district of Waldviertel, highly illiterate and very inbred (5; 8).

Alois Hitler, at first a cobbler, had by the age of forty achieved the position of an Austrian customs official. The education for this position was the contribution of his first wife, Anna Glasl, who, fifteen years his senior, died in 1883. His second wife, whom he married six weeks later, died in a year, and three months later, on January 7, 1885 (5), he married Klara Poelzl, a distant cousin.

In appearance Heiden has compared Alois to Hindenburg (8). Gunther (5) describes his picture as showing a big, round, hairless skull; small, sharp, wicked eyes; big bicycle-handle moustachios; and heavy chin. He was a harsh, stern, ambitious, and punctilious man (5; 8).

Alois' wife, Klara, is described (5) as being a tall, nervous young woman, not as strong as most peasant stock, who ran off to Vienna as a girl to return after ten years (a daring escapade for one in her social status). Her doctor (1) describes her in her early forties as tall, with brownish hair neatly plaited, a long oval face and beautifully expressive grey blue eyes. A simple, modest, kindly woman.

Adolf Hitler, born in 1889, as far as can be ascertained³ was Alois' fifth child, the third of his own mother but the first to live more than two years.⁴ This it would seem was a large factor in channelling the great affection for Adolf which all the evidence seems to show she bore him. In return, Adolf, who feared and opposed his father—as he himself admits—gave all his affection to his mother, and when she died of cancer in 1908 he was prostrated with grief (8; 9; 1).

Adolf as a boy and youth was somewhat tall, sallow and old for his age, with large melancholy thoughtful eyes. He was neither robust nor sickly, and with but the usual infrequent ailments of a

³ Heiden points out that the uncertain details of Hitler's family have had to be collected from stray publications, that Hitler himself is reticent to the point of arousing suspicion, about his life story (8).

⁴ Alois' children were Alois, 1882 (son by first wife); Angela, 1883 (daughter by second wife); Gustav, 1885-1887; a daughter, 1886-1888; Adolf, 1889; Edmund, 1894-1900; Paula, 1895 or 1896 (children by third wife).

cold or sore throat. That he had lung trouble is a common and natural belief (9) but his doctor says "no" (1). His recreations were such as were free—walks in the mountains, swimming in the Danube, and reading Fenimore Cooper and Karl May.⁵ A quiet, well-mannered youth who lived with himself.⁶

About Adolf's early education we know little except what he himself tells us—that he early wanted to be an artist; that this outraged his father, who sternly determined to make a good civil servant of him; that there was a perpetual struggle between the two, with his mother siding with Adolf and finally sending him off to Vienna to complete his art education when his father died. Except for history and geography which caught his imagination he neglected his studies, to find in Vienna, when he failed his art examination, that his lack of formal education was a barrier to entering the architectural school.

At the age of nineteen, when his mother died, he went to Vienna to spend there three lonely and miserable years, living in "flophouses" (7), eking out a living by begging, shoveling snow, peddling his own postcards, working as a hod-carrier or casual laborer of any sort. Here his ideas began to crystallize, his anti-Semitism and anti-Slavism, his anti-ideas of all sorts. In 1912 he went to Munich and there as "water-color artist, picture postcard painter, technical draftsman and occasional house-painter Hitler managed to earn some sort of a living" (8, 25). In 1914 he enlisted in the army with great enthusiasm, performed his duties with distinction and bravery,⁷ was wounded, sent home to recover, and in March, 1917, was back at the front. He was aloof from comrades, zealous in his duty, and very lonely. Through all the war he received no letter or parcel (8).

The war over and with no home to go to, Hitler in 1919 was appointed an espionage agent of the insurgent Reichswehr which had just put down the Soviet Republic in Munich. Shortly thereafter he came in contact with Anton Drexler and what was to become later the Nazi party had its beginning. Further than this it is not necessary to follow Hitler's political history. It is too well known and the basic structure of his personality was already formed.

⁵ A German author of Indian stories

⁶ This in contrast to Hitler's own account of himself as a bit of a young tough (9).

⁷ Military awards were: Regimental Diploma for Conspicuous Bravery, Military Cross for Distinguished Service, Third Class, The Black Wounded Badge, and The Iron Cross, First Class (8).

Later years have only brought to fruition latent tendencies and laid the final product open for the world to wonder at. We must now turn to a closer examination of this structure.

HITLER'S PERSONAL APPEARANCE AND MANNER

Portraits or moving pictures of Hitler are common enough, yet it is well to draw attention to various aspects of his physique. To most non-Nazis Hitler has no particular attraction. He resembles a second-rate waiter. He is a smallish man, slightly under average height. His forehead is slightly receding and his nose somewhat incongruous with the rest of his face. The latter is somewhat soft, his lips thin, and the whole face expressionless. The eyes are a neutral grey which tend to take on the color of their momentary surroundings.⁸ The look tends to be staring or dead and lacking in sparkle. There is an essentially feminine quality about his person which is portrayed particularly in his strikingly well-shaped and expressive hands (2; 8; 13; *et al.*).

Hitler's manner is essentially awkward and all his movements jerky except perhaps the gestures of his hands. He appears shy and ill at ease in company and seems seldom capable of carrying on conversation. Usually he declaims while his associates listen. He often seems listless and moody. This is in marked contrast to the dramatic energy of his speeches and his skillful play upon the emotions of his vast audiences, every changing mood of which he appears to perceive and to turn to his own purposes. At times he is conciliatory, at other times he may burst into violent temper tantrums if his whims are checked in any way (16).

ATTITUDES, TRAITS, AND NEEDS CHARACTERISTIC OF HITLER

Attitudes toward Nature, Fate, Religion. First and last words are often significant. *Mein Kampf* begins with a sentiment of gratitude to Fate, and almost its last paragraph appeals for vindication to the Goddess of History. However, all through the book there are references to Eternal Nature, Providence, and Destiny. "Therefore, I believe today I am acting in the sense of the Almighty creator: by warding off the Jews I am fighting for the Lord's work" (9, 84). This feeling of being directed by great forces

⁸ This fact has caused an amazing number of different descriptions of his actual eye color.

outside one, of doing the Lord's work, is the essence of the feeling of the religious mystic. No matter how pagan Hitler's ethical and social ideas may be, they have a quality comparable to religious experience. Moreover, all through his acts and words, both spoken and written, is this extreme exaggeration of his own self-importance—he truly feels his divine mission (16), even to the point of foreseeing a martyr's death (16).

As far as authorized religion is concerned, Hitler recognized both its strengths and weaknesses (9; 12) and adopted freely whatever he found serviceable for his own ends. That he strikes down Protestant and Catholic alike is due merely to the conviction that these religions are but old husks and must give way to the new (9).

Toward conscience his attitude is a dual one. On the one hand he repudiates it as an ethical guide, heaping contempt on it as a Jewish invention, a blemish like circumcision (16). He scorns as fools those who obey it (16). But in matters of action he waits upon his inner voice, "Unless I have the inner incorruptible conviction, *this is the solution*, I do nothing. . . . I will not act, I will wait no matter what happens. But if the voice speaks, then I know the time has come to act" (16, 181). Like Socrates he listens to his Daimon.

Hitler's Attitude toward Power and His Need for Aggression. To the German people and the world at large, Hitler appears as a man of tremendous strength of will, determination, and power. Yet those who are or have been close to him (e.g., 16) know that he is conscious of being powerful and impresses others as such only at certain times. When he is declaiming to a great throng or when he is on one of his solitary walks through the mountains, then Hitler is conscious of his destiny as one of the great and powerful of the ages. But in between these periods he feels humiliated and weak. At such times he is irritated and unable to do or decide anything. It is these feelings of his own weakness that no doubt have determined to a great extent his ideas on the education of youth. All weakness must be knocked out of the new German youth, they must be indifferent to pain, have no fear of death, must learn the art of self-command; for only in this way can they become creative Godmen (16). Hitler's feelings of weakness and power probably also determine his attitudes towards peoples and nations. For those who are weak, or for some reason do not display power,

he has only contempt.⁹ For those who are strong he has feelings of respect, fear, submissiveness (4; 9; 16). For the Britain of the great war period he had great respect (9), but only contempt for the powerless Indian revolutionaries who tried to oppose British imperial power (9).¹⁰ For the masses over whom he has sway he feels only contempt. He compares them to a woman who prefers to submit to the will of someone stronger (9). He harangues the crowd at night when they are tired and less resistant to the will of another (9). He uses every psychological trick to break the will of an audience. He makes use of all the conditions which make in the German people for a longing for submission, their anxieties, their feelings of loneliness (9). He understands his subjects because they are so like himself (4).

Closely related to his attitude toward power, and one of the basic elements of Hitler's personality structure, is a deep-lying need for aggression, destruction, brutality. It was with him in phantasy at least in childhood (9). And there is evidence of it from his days in Vienna (7). We know too (9) that the outbreak of the first great war was a tremendously thrilling experience for him. Since the war we have seen his adoption of so-called "communist" methods of dealing with hecklers (9), the murder of his close friends, his brutality toward the Jews, his destruction of one small nation after another, and his more recent major war against the rest of the world. But this element of his personality is so patent that it hardly needs documenting.

Hitler's Attitude toward the Jews and toward Race. Anti-Semitism is not an uncommon thing and Europe has a long history of it but, as has been pointed out, "in the case of Hitler, the Jew has been elevated, so to speak, to a degree of evilness which he had never before obtained" (10, 8). That this hatred is of a more than usual pathological nature is suggested by the morbid connection which Hitler makes between the Jew and disease, blood disease, syphilis (9), and filthy excrescences of all sorts. The Jew in fact is not even a beast, he is a creature outside nature (16). He is at the root of all things evil not only in Germany but elsewhere and

⁹ "My great political opportunity lies in my deliberate use of power at a time when there are still illusions abroad as to the forces that mould history" (16, 271).

¹⁰ It is interesting to note that the war against Britain appears only to have broken out because Hitler was convinced that she would not and could not resist the strength of the German armed forces

only through his destruction may the world be saved. It is at this point, too, that Hitler's feelings about race find expression. For him there is an inner emotional connection between sex, syphilis, blood impurity, Jewishness and the degeneration of pure, healthy, and virile racial strains. Like the need for aggression, his fear of the tainting of blood is a major element in Hitler's personality structure.

Hitler's Attitude toward Sex. That Hitler's attitude toward sex is pathological is already clear from what has been said above. The best sources we have do not, however, tell us explicitly what it is that is wrong with Hitler's sex life. From the fact that his close associate, Röhm, as well as many of the early Nazis were homosexuals it has been a matter of gossip that Hitler too is affected in this way. All reliable sources, however, deny that there is any evidence whatever for such an idea (8). In fact, Hitler appears to have no close men friends, no intimates at all. Röhm was the only one whom he addressed with the intimate "du" (5) and it is reported that no one has succeeded since the latter's death to such a position of intimacy.

In regard to women, the reports are conflicting. Most of the recent books by newspaper men (e.g., 5) stress Hitler's asceticism, his disinterest in women. However, Heiden (8) documents his love affairs, and Hanisch (7), Strasser (18), and Rauschning (16) have considerable to say about his attitude toward the opposite sex. As far as can be ascertained, it is completely lacking in respect, even contemptuous (7); it is opportunistic (18; 16) and in the actual sexual relationship there is something of a perverse nature along with a peculiar enslavement to the partner of his choice (8). It is certain that many women find Hitler fascinating (16; 7) and that he likes their company, but it is also true that he has never married, and in every love affair the break was made, not by Hitler, but by the lady concerned (8). In one case, that of his niece, Geli, there was real tragedy involved for either he murdered her in a fit of passion, according to Strasser's evidence (18), or he so abused and upset her that she committed suicide (8). Finally, one must mention again his frenzied outburst against syphilis in *Mein Kampf* (9) as if the whole German nation were a vast putrifying hotbed of this loathsome disease. Heiden's statement (8) that "there is something wrong" with Hitler's sex life is surely an eloquent understatement.

Hitler's Need to Talk. This rather obvious need is worth noting at this point, after what has just been said above.¹¹ Ever since Hitler's discovery of his facility as a speaker, his own people and the world have been deluged with his words. The number of speeches is large, varying in length from one and a half to two hours, though there are several of three and even four hours' duration. In private, moreover, Hitler seldom converses, for each individual whom he addresses is a new audience to be harangued. In his moments of depression he must talk to prove to himself his own strength and in moments of exaltation to dominate others (16).

Hitler's Attitude toward Art. Though Hitler's father intended him to be a civil servant, he himself craved to be an artist and his failure to be recognized as such by the Vienna school was one of his most traumatic experiences (9). As Führer his interest in art continues and he shows distinctly favorable attitudes toward music, painting, and architecture.

As is well known, Wagner is Hitler's favorite—we might almost say only—composer. At twelve he was captivated by Lohengrin (9), at nineteen in Vienna he was championing the merits of Wagner as against Mozart (7), and as Führer he has seen *Die Meistersinger* over a hundred times (19). He knows all of Wagner's scores (19) and in their rendition he gets emotional release and inspiration for his actions. His savior complex, feelings about sex, race purity, his attitudes toward food and drink, all find stimulus and reinforcement in the plots, persons, and themes of his favorite composer. It is interesting, for example, that Hitler has chosen Nuremberg, the town which Wagner personified in Hans Sachs, as the official site of the meeting of the annual Nazi Party Congress (19).

Wagner's influence over Hitler extends beyond the realm of music to that of literature. Among the Führer's favorite readings are Wagner's political writings, and consciously or unconsciously he has copied Wagner's turgid and bombastic manner with a resulting style which according to Heiden often transforms "a living sentence into a confused heap of bony, indigestible words" (8, 308).

In the field of painting there are two matters to consider—Hitler's own work and his attitude toward the work of others. As regards the former, we have evidence that during his Vienna days Hitler showed little ability except for copying the painting of others (7).

¹¹ From the analytic point of view this may well be interpreted as a compensation for sexual difficulties.

Some of the works that are extant, however, display some flair for organization and color, though there is nothing original. Many of his paintings show a preoccupation with architecture, old ruins and with empty desolate places; few of them contain people. The somewhat hackneyed designs of the party badge and flag give further evidence of lack in originality. As regards the painting of others, Hitler has surrounded himself with military pictures of all sorts and with portraits of very literal and explicit nudes (16; 18). At his command German art has been purged of its modernism, and classic qualities are stressed instead.

It is in architecture that Hitler's artistic interest finds its greatest outlet. He spends a great deal of time over architect's designs and all important German buildings and monuments must be approved by him. Massiveness, expansiveness, size, and classic design are the qualities which Hitler stresses and approves in the buildings of the new Germany. His seventy-five-foot-broad motor roads, the conference grounds at Nuremberg, and his retreat at Berchtesgaden are all examples of these emphases.

Hitler's Ascetic Qualities. Hitler's ascetic qualities are popularly known and are substantiated by many writers (5; 13). Hitler himself, according to Rauschning (16), accredits his vegetarianism and his abstinence from tobacco and alcohol to Wagner's influence. He ascribes much of the decay of civilization to abdominal poisoning through excesses. This asceticism of Hitler's is all the more striking among a people who, on the whole, are hearty eaters and fond of drinking. It is worthy of note, however, that at times Hitler is not averse to certain types of over-indulgence. He is, for example, excessively fond of sweets, sweetmeats, and pastry (7; 16), and will consume them in large quantities.

Hitler's Peculiar Abilities. Hitler, the uneducated, is nevertheless a man of unusual ability, particularly in certain areas where formal education is of little value and even in areas where it is supposed to be important. More than once we find those who know him [e.g., Rauschning (16)] stressing his extraordinary ability to take a complicated problem and reduce it to very simple terms. It is hardly necessary to document Hitler's ability to understand and make use of the weaknesses of his opponents, his ability to divide them and strike them one by one, his sense of timing so as to strike at the most opportune moment. It is certain, however, that these abilities of Hitler's have definite limitations. Hitler has become

more and more isolated (16) from contact with what is actually occurring and thus has insufficient or incorrect data on which to base his decisions. Moreover, his own frame of reference is an unsatisfactory guide to an understanding of peoples outside the European milieu. He has, consequently, frequently misunderstood both British and American points of view with unhappy results to his own program of expansion.

Overt Evidence of Maladjustment. Certain facts symptomatic of maladjustment have already been mentioned, such as his peculiar relationship to women. Here there have to be added others of a less specific nature. Hitler suffers from severe insomnia and when he does sleep has violent nightmares (16). At times he suffers from hallucinations, often hearing voices on his long solitary walks (16). He has an excessive fear of poisoning and takes extreme precautions to guard against it both in his food and in his bedroom (16). Here the bed must be made only in one specific way (16). He cannot work steadily, but with explosive outbursts of activity or not at all (16; 8). Even the smallest decision demands great effort and he has to work himself up to it. When thwarted, he will break out into an hysterical tantrum, scolding in high-pitched tones, foaming at the mouth, and stamping with uncontrolled fury (16). On several occasions, when an important speech was due, he has stood silent before his audience and then walked out on them (16). In the case of at least one international broadcast he was suddenly and inexplicably cut off the air. Finally, there is Hitler's threat to commit suicide if the Nazi party is destroyed or the plans of the German Reich fail (6).

THE SOURCES OF HITLER'S MALADJUSTMENTS

The Sources of Hitler's Aggressive and Submissive Traits. The schizoid temperament, one such as Hitler's, which combines both a sensitive, shy, and indrawn nature with inhibitions of feeling toward others, and at the same time, in way of compensation, violent aggressiveness, callousness, and brutality, from the point of view of constitutional psychology is usually associated with a particular type of physique. It is difficult from the sort of photograph available to classify Hitler's physique accurately. He probably falls in Kretschmer's athletic group though verging on the pyknic (11). This would place him in the schizophrenic group

of temperaments. In terms of Sheldon's system, he is probably classifiable as a 443 with a considerable degree of gynandromorphy, that is, an essentially masculine body but one showing feminine characteristics also (17).

Probably more important, however, is the social milieu and the family situation in which Hitler grew up. In a strongly patriarchal society, his father was particularly aggressive and probably brutal toward his son, Adolf. This would produce an individual both very submissive to authority and at the same time boiling over with rebelliousness to it. Further, we know of the extreme attachment which Hitler had for his mother. If, as seems most likely, he has never outgrown this,¹² there might be a protest in his nature against this enslavement, which in turn might give rise to a deep unconscious hatred, a possible source of frightful unconscious rage.¹³ Finally, the consistent failure to achieve his artistic ambitions, his loneliness and poverty in Vienna, his failure to arrive at any higher status than that of corporal in his beloved army (8), all must have stimulated in highest degree whatever original tendency there was toward brutality and destructiveness.

The Sources of Hitler's Anti-Semitism. Anti-Semitism was part of the social milieu in which Hitler grew up. He admits himself (9) that he avoided the only Jewish boy at school and it is known that anti-Semitism and asceticism were strong in Catholic rural communities in Europe. In Vienna, of course, Hitler came in contact with violent anti-Semitic literature and it is at this period that he claims his deep-rooted hatred for the Jews was born (9). The pathological strength of this hatred suggests that there were certain psychological as well as cultural reasons for it. What they were we can only surmise but we can list certain possibilities. We know that the name Hitler is a common Jewish one (8), that Adolf was teased about his Jewish appearance in Vienna.¹⁴ There is, too, the mystery of Alois Hitler's true parentage which his son may have known. We also know that many of the people who helped him, gave him food, and bought his paintings were Jews.¹⁵ To have to accept kindnesses from people he disliked would not add to his love

¹² Note Hitler's frequent and unusual use of the word *Motherland* for Germany (9).

¹³ Hitler's hatred of meat and love of sweets is said to be often found in cases harboring an unconscious hate of the mother (15).

¹⁴ It is interesting that Hitler's description of the first Jew to arouse his hatred is almost word for word the same as Janisch's description of Hitler in Vienna (7).

¹⁵ His rejection of the Jew may also stem from the rejection within himself of the passive gentle elements which are prominent in Hebrew-Christian thought.

of them. But there must be more to it than this for Hitler's anti-Semitism is bound up with his morbid concern with syphilis and phobia over contamination of the blood of the German race. This, therefore, leads to a discussion of Hitler's theories.

Sources of Hitler's Theories of Race and Blood. The concept of the superiority of the Aryan race is, of course, not new with Hitler. Its great exponent was Houston Stewart Chamberlain. In the writings of Wagner also the same conception is exalted. But the constant repetition of the idea of blood, pure blood, and untainted blood which occurs in *Mein Kampf* calls for a more than purely cultural explanation. This is suggested all the more forcefully because of the association which Hitler makes between impurities of blood which are due to disease (syphilis) and impurities in the blood of a superior race due to mixture with a racially inferior stock; further to the fact that he points to the Jews as the source of both.

Now it is known that syphilophobia often has its roots in the childhood discovery of the nature of sexual congress between the parents. With a father who was an illegitimate and possibly of Jewish origin,¹⁶ and a strong mother fixation, such a discovery by the child Adolf may well have laid the basis of a syphilophobia which some adventure with a Jewish prostitute in Vienna fanned to a full flame.¹⁷ Terrified by the fear of his own infection, all the hatred in his being is then directed toward the Jews.

ONE POSSIBLE PSYCHOLOGICAL INTERPRETATION

Hitler's personality structure, though falling within the normal range, may now be described as of the paranoid type with delusions of persecution and of grandeur. This stems from a sado-masochistic split in his personality (4). Integral with these alternating and opposed elements in his personality are his fear of infection, the identification of the Jews as the source of that infection, and some derangement of the sexual function which makes his relations to the opposite sex abnormal in nature.

The drama and tragedy of Hitler's life are the projection onto the world of his own inner conflicts and his attempts to solve them. The split in Hitler's personality seems clearly to be due to his

¹⁶ The name Hitler is Jewish as was pointed out.

¹⁷ This is mere conjecture and must be treated as such. But it is the sort of explanation which fits known psychological facts.

identification both with his mother, whom he passionately loved, and with his father, whom he hated and feared. This dual and contradictory identification (the one is gentle, passive, feminine; the other brutal, aggressive, masculine) results—whenever Hitler is playing the aggressive role—also in a deep hatred and contempt for his mother and love and admiration for his father. This inner conflict is projected into the world where Germany comes to represent the mother, and the Jew and—for a time—the Austrian State, the father. Just as the father is the cause of his mixed blood, the source of his domination and punishment, and of the restrictions of his own artistic development; just as in the childish interpretation of sexual congress the father attacks, strangles, and infects the mother, so the Jew, international Jewish capital, etc., encircle and restrict Germany, threaten and attack her and infect her with impurities of blood. Out of the hatred of the father and love of the mother came the desire to save her. So Hitler becomes the savior of Germany, who cleanses her of infection, destroys her enemies, breaks their encirclement, removes every restriction upon her so that she may expand into new living space, uncramped and unthrottled. At the same time, Hitler is cleansing himself, defending himself, casting off paternal domination and restriction.

Not only is the Father feared but he is a source of jealousy for he possesses, at least in part, the beloved mother. So he must be destroyed to permit complete possession. The destruction of the father is achieved symbolically by the destruction of the Austrian State and complete domination and possession of the mother through gathering all Germans in a common Reich.

But the mother is not only loved but hated. For she is weak, besides he is enslaved to her affections and she reminds him all too much, in his role as dominant father, of his own gentle sensitive nature. So, though he depends on the German people for his position of dominance, he despises and hates them, he dominates them and, because he fears his very love of them, he leads them into the destructiveness of war where multitudes of them are destroyed. Besides, the Jewish element in his father identification permits him to use all the so-called "Jewish" tricks of deceit, lying, violence, and sudden attack both to subject the German people as well as their foes.

To be dominant, aggressive, brutal is to arouse the violent protest of the other side of his nature. Only severe anxiety can come from

this; nightmares and sleepless nights result. But fear is assuaged by the fiction of the demands of Fate, of Destiny, of the Folk-Soul of the German people.

The denouement of the drama approaches at every aggressive step. The fiction of the command of Fate only holds as long as there is success—greater and greater success to assuage the mounting feelings of anxiety and guilt. Aggression, therefore, has a limit; it cannot go beyond the highest point of success. When that is reached, the personality may collapse under the flood of its own guilt feelings.¹⁸ It is, therefore, quite possible that Hitler will do away with himself at whatever moment German defeat becomes sufficient enough to destroy the fiction of Fate which has shielded him from the violence of his own guilt. He may then turn upon himself the destructiveness which so long has been channelled toward his people and their neighbors.

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¹⁸ That Hitler is partly conscious of this we know from his own threats of suicide and references to dying for the German people (9).

HYPNOSIS AND THE CONCEPT OF DISSOCIATION

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IN the history of attempts to explain hypnosis the concept of dissociation has occupied a prominent place. It was originally put forward to account for the symptoms of hysteria, but its extension to hypnosis followed as a matter of course at a time when the two phenomena were thought to be almost identical. More recently dissociation has begun to wane; experiments have failed to clarify its nature, and other concepts have proved more valuable in explaining clinical observations. Much can be learned from this decline, which marks the progress of recent thought from the surface to the depths of personality, from the manifest level of behavior to the more hidden but often more influential levels. In this paper we shall review the concept of dissociation as it was first devised to explain hysterical symptoms, and we shall consider the different ways in which it has been applied to hypnosis. This will involve the discussion of some experiments designed to test dissociation and to show its relation to hypnotic susceptibility, and here we shall report an additional experiment of our own. Finally, we shall try to estimate the current value of the concept and its bearing on the theory of hypnosis.

JANET'S USE OF DISSOCIATION

The concept of dissociation was introduced by Janet to explain what he considered to be the most typical hysterical symptom, somnambulism. Readers of his well-known lectures, *The Major Symptoms of Hysteria*, can hardly fail to be impressed by the ingenious way in which he centers diverse phenomena on the idea of somnambulism. He begins with the pure cases, monoideic somnambulisms, in which a system of ideas and actions takes possession of the patient for a short period of time but afterwards appears to be forgotten.

During the crisis itself, two opposite characteristics manifest themselves; first, a huge unfolding of all the phenomena connected with a certain delirium; second, an absence of every sensation and every memory that is not connected with that

delirium. After the crisis, during the state that appears as normal, two other characteristics appear, opposite, to all appearance: the return of consciousness of sensations and normal memory, and the entire forgetfulness of all that is connected with the somnambulism. Let us remember all these notions that here seem very simple, and we shall afterwards see them unfolded in every hysterical phenomenon (8, p. 36).

Things happen as if an idea, a partial system of thoughts, emancipated itself, became independent and developed itself on its own account. The result is, on the one hand, that it develops far too much, and, on the other hand, that consciousness appears no longer to control it (8, p. 42).

Janet proceeds to show that complex hysterical symptoms are nothing more than variant forms of the simple somnambulism. The fugue, for instance, is an attenuated form in which the dissociated system is less isolated; hence it attains less complete development so that hallucination does not result and the power to deal with everyday affairs is not lost. Together with polyideic somnambulisms, the fugue may be understood as the dissociation of a system of ideas which achieves its mental unity not through reference to a single event but because of a ruling emotion, such as fear or love or jealousy: "it is a feeling in its entirety, a more or less precise feeling that has separated from general consciousness, and that develops in an independent way, giving birth to these odd deliriums." Convulsive attacks, in their turn, are aborted somnambulisms in which the dissociated systems express themselves not in ideas, words, and acts, but in the inferior form of motor storm and emotional explosion. Fits of sleep represent a still further obliteration of outward signs, yet the dissociated system is held to be still regnant in a dreamy ideational form.

It is plain from this account for what purpose Janet needed the concept of dissociation. It was to describe the pathological separation or insulation between systems of ideas which normally would interpenetrate and influence each other. The special mark of this insulation was amnesia, the patient's failure in his well states to remember the sick ones or in his sick ones to remember the well. The characteristic effect of this insulation was the overdevelopment of those systems which no longer enjoyed communication with the integrated conscious self. It was in this form that Janet applied dissociation most directly to hypnosis. He considered the hypnotic state to be a somnambulism analogous to those of hysteria, differing only in that it could be initiated by artificial means. As in natural somnambulisms, there was amnesia, indicative of dissociation, when

the subject awoke from his trance, and, as in other cases of dissociation, there was an overdevelopment of the ideas presented during the trance. Light hypnosis without loss of memory offered no obstacle to this reasoning because Janet, like many students in his time, included post-hypnotic amnesia in his definition of the hypnotic state.

The concept of dissociation was destined to have a varied history, to spread out and grow less precise, and at last to be applied in the most indiscriminate fashion. From the very start it was in danger of growing to gigantic proportions like its cousin, the concept of association, and of becoming a universal principle of mental disintegration just as association had once been a universal principle of learning. But careful students of Janet will know that such self-inflating concepts were far from his habits of thought. It was Janet, they will remember, who held himself to a precise and limited definition of suggestion, the concept which has since run like a forest fire through social psychology leaving havoc in its path. He showed a similar restraint in regard to dissociation. It was not to mean any kind of separation in the mind; it was not to include, for example, acts of discrimination and logical distinctions. It was as precisely limited as possible and referred only to instances of *pathological* insulation, when systems which *in everyday life and common experience* interact and influence each other are discovered to be acting with a *peculiar degree* of separation behind boundaries marked by amnesia. Up to this point the concept of dissociation covered definite, unusual, and important phenomena and brought them together in a new and useful fashion.

In order to complete the story of hysterical symptoms, however, Janet was forced to extend his concept to phenomena which less and less resembled monöideic somnambulisms. To accomplish this it was necessary to broaden considerably his first ideas as to what constituted a dissociable system. He had already made a concession in describing the case of Marceline, an example of double personality in which one state was physically and mentally depressed almost to inanition.

These sudden changes, without sufficient transition, bring about two different states of activity: the one higher, with a particular exercise of all the senses and functions; the other lower, with a great reduction of all the cerebral functions. These two states separate from each other; they cease to be connected together, as with normal individuals, through gradations and remembrances. They become

isolated from each other, and form these two separate existences. Here, again, there is a mental dissociation more complicated than the preceding ones. There is dissociation, not only of an idea, not only of a feeling, but of one mental state of activity (8, p. 92).

Further modifications followed when Janet came to describe hysterical paralyses, anaesthesias, and difficulties of vision. These symptoms, he believed, still represented a dissociation of systems normally integrated, but now the systems in question were regarded as functions organized not in the patient's recent experiences but long before in childhood or even in racial history. If a patient was unable to walk, it was because the organized system of sensations and images which controlled walking had become dissociated from the rest of the personality; similarly, if a patient became paralyzed on the right side, it was because the sensations and images of the right side constituted an organized system of their own, liable to insulation.

Nowhere is this dissociation more precise and curious than in the case of vision. The reason is that vision is a very complicated function, which is subdivided into numerous operations and which plays a great part in the mind. Hysteria can effect on it every possible dissociation. First, it may separate at once the whole of the visual function from the ensemble of the mind; this is the most radical and the rarest dissociation. Then it may cause the visual function to crumble, so to speak, dividing and subdividing it into its elementary functions, doing away with one and sparing another with a cleverness that the greatest physiologist might envy (8, p. 185).

In order to carry out this hypothesis it was necessary to assume that monocular and binocular, foveal and peripheral, left-side and right-side vision were all separate natural systems; there was, for instance, a "function of vision to the right" and a "function of vision to the left," and these two might become separately dissociated. We may well begin to suspect that the concept of dissociation is growing too flexible.

If Janet's studies had rested at the earlier stage his clinical descriptions would almost have demanded dynamic explanation. It was upon just such a patient as he might have described, showing a perfect dissociation of ideas and memories organized around a painful experience, that Breuer and Freud made their celebrated investigation which led in time to the concept of repression and the whole psychoanalytic system of psychology. But, as Janet moved from systems of ideas and personal memories to systems which underlay simple biological functions, like walking or seeing with

both eyes, his thoughts were impelled in a different direction. If hysteria, in addition to dissociating painful events and painful feelings, could divide the behavior mechanism into its natural levels and could "decompose the enormous psycho-physiological system and separate its functions," then one was justified in seeking one's explanation in general physiological concepts. Thus Janet was led to his final notion of hysteria as a special state of the nervous system such that its functions fell apart along given lines of cleavage, innate or acquired. When fatigue overtook a nervous system innately predisposed to this misfortune, the energy necessary for synthesis ceased to be available and the dissociation of systems inevitably followed.

In spite of the freedom which Janet thus allowed in the definition of a system, there is a certain consistency in his concept of dissociation to which he himself, because of his preference for physiological hypotheses, did not give sufficient emphasis. The "falling-apart" of systems which he describes is never, even in the anaesthesias and troubles of vision, a random shattering as if loose jointed rock had been hit by a hammer. Janet always insisted, and in his later lectures (9) elaborated, upon the idea of organization; he conceived of personality as a system marked at its highest moments of organization by consciousness of self. In his descriptions of dissociated phenomena there is always an unusual separation of some subsystem from the controlling influence of this conscious self. This is true whether the dissociated system be an innate subfunction of vision or the memories connected with a recent painful event. The personality remains organized, the conscious self continues to function, and its only shortcoming lies in its failure to control the insulated subsystem, which may enjoy its emancipation quietly, as in paralyses and anaesthesias, or may erupt to produce a temporary delirium, as in somnambulisms. Even cases of fugue and multiple personality, with their relatively large inroads on the main organization of the self, fall satisfactorily into this scheme. It is only necessary to assume that if a sufficiently large subsystem becomes dissociated it may form an internal organization of its own with status as a rival self. All physicians who have worked with such cases agree that it is possible to distinguish the real or original self, the therapeutic task being to make this once more dominant. Thus it may be said that Janet applied the concept of dissociation whenever a subsystem of the personality, normally integrated into that whole which is the

conscious self, became insulated to the extent that the self was unconscious of its existence. He allowed subsystems to be constituted in a variety of ways and, so to speak, in a variety of sizes, but the idea of separation from the main part of the personality, the self-conscious part, he held consistently from beginning to end.

We need not follow the further development of Janet's thoughts, for they have little immediate bearing on the topic of this paper. Our present concern is to evaluate the concept of dissociation not as it applies to hysteria but solely as a means of understanding the artificially induced phenomenon of hypnosis.

APPLICATION TO HYPNOSIS

For many years dissociation has been regarded as the key to an understanding of hypnotism. Following Janet rather closely, most workers have looked upon hypnosis as a dissociated state and have considered that hypnotic susceptibility depended on an innate tendency to become dissociated, a tendency the strength of which differed from one individual to another. It is interesting to notice, however, that two quite different applications have been derived from Janet's original concept. On the one hand, it has been conceived that the whole hypnotic trance was dissociated from the preceding and following normal states, a temporal segment blocked out by walls of amnesia. This notion, which may appropriately be called either vertical or temporal dissociation, reminds us of *monoideic somnambulism* and corresponds to the application that Janet himself seems to have favored. On the other hand, hypnosis has been conceived as a state in which dissociated activities took place, the behavior mechanism working in an insulated, disorganized way, often at odds with itself. The first view implies that the conscious self is totally suspended throughout the whole hypnotic episode, behavior being ruled by a dissociated system. The second view, which seems to correspond more closely with Janet's later formulations about personality, makes less of the amnesic boundaries and implies that the conscious self remains active, though relatively ineffectual, throughout the trance. It is as if a horizontal dissociation took place so that the usual organization of behavior does not prevail; the commands of the central government are disregarded and the several subsystems lend an ear to solicitations proceeding from the hypnotist. These two legitimate but independent applications serve to warn us against the dangerous versa-

tility of Janet's idea. In the following paragraphs we shall evaluate both applications, considering their aptness in describing hypnotic phenomena and citing the more important experiments designed to test them.

A. The Hypnotic Trance as a Temporally Dissociated Episode. When a person emerges from hypnosis with amnesia, having a break in his memory that extends from the beginning to the end of the trance, it seems at first glance appropriate to speak of a dissociated episode. By their recency and importance the events of the trance seem entitled to a prominent place in memory, and their failure to appear there suggests some kind of functional barrier that is holding them back. It is easy to show, by a second hypnosis or by a new suggestion, that these events are not really forgotten; there has been no wiping-out of impressions, but simply an inability at the given moment to communicate with the appropriate traces. Post-hypnotic amnesia is one of those unexpected breaks or insulations in the mind for which the concept of dissociation was devised.

The nature and depth of post-hypnotic amnesia was put under experimental investigation some fifteen years ago by Hull and his associates. "Certain casual observations," Hull (10) remarked, "seem to indicate that post-hypnotic amnesia may prove to be a fairly superficial phenomenon." Under his guidance, experiments were arranged to measure the effectiveness of the dissociative barrier on different types of memory function. In all of these experiments the subject denied recollection of trance events, so that at the level of voluntary efforts at recall the amnesia could be considered 100 per cent. Strickler (19) showed that when measured by detailed specific recall the amnesia was a little less than complete, amounting to 97 per cent. His subjects learned paired nonsense associates during a hypnotic trance and were required to display the results of their learning after being awakened. They uniformly denied recognition of the stimulus figures, but once in a while they gave a correct response word, declaring that it seemed to come to them from nowhere. When it came to relearning the material, Strickler found the amnesia sharply reduced to 50 per cent; the subjects were able to relearn the material in the waking state with half the number of promptings that would normally have been required for a first learning. A rather similar result was obtained by Coors (3) on the relearning of a stylus maze habit first learned under hypnosis. Post-hypnotic amnesia for this habit amounted

to 45 per cent when measured by number of trials, 46 per cent when measured by errors. In three further investigations Patten (14), Life (11), and Scott (16) found that practice effects are entirely exempt from post-hypnotic amnesia. Patten allowed his hypnotized subjects to practice an unfamiliar arithmetical operation and showed that the benefit of this practice was not at all lost when they repeated the operation in a subsequent waking state. Life obtained the same result with generalized practice effects in memorizing, and Scott with a simple conditioned response. Finally, Mitchell (13) has made a series of experiments based on the hypothesis that the well-known phenomenon of retroactive inhibition would be reduced or even eliminated if the interfering activity were surrounded by barriers of dissociation. To mention but one of several procedures that she used, a list of numbers was memorized in the waking state, a second list was learned under hypnosis, and the first list was relearned when the subject awoke from the trance. Mitchell's results were uniformly negative: the second list interfered with the first as much, if not more, than it did in control experiments where there were no dissociative barriers to be crossed.

The results of these experiments justify Hull's suspicion that post-hypnotic amnesia is a fairly superficial phenomenon. The alleged dissociative barrier is not at all sufficient to block retroactive inhibition or normal practice effects; it slows up but does not entirely obstruct the relearning of nonsense material and a stylus maze habit; and it seems to operate with complete effectiveness only when voluntary recall and recognition are at stake. In connection with these facts which qualify and limit the concept of dissociation it is important to remember that post-hypnotic amnesia is closely dependent on suggestion. The events of the deepest trance, marked perhaps by profound sensory and motor changes, can be readily remembered if the operator gives a direction to this effect. Furthermore, it is not difficult for the hypnotist to break up the trance episode into the most arbitrary compartments by declaring that one item will be remembered and another forgotten. Post-hypnotic amnesia, as Hull pointed out, cannot be regarded as a "primitive physiological mechanism"; it is neither so deep nor so fixed as we would expect if it were the product of some general condition of the brain. Dissociation, as exemplified in post-hypnotic amnesia, is a cleavage or insulation in memory that shows the following two characteristics: (1) it is highly docile to sug-

gestion even in the most arbitrary patterns, and (2) its effectiveness declines as one passes from conscious voluntary processes to unwitting involuntary ones such as practice effects. Of themselves, these considerations do not destroy the value of the concept; the experiments of Strickler and Coors on relearning may even be taken as an argument for its retention. They serve rather to define and restrict it, a necessary step to its final evaluation.

B. Hypnosis as a State in Which Behavior Systems Become Dissociated. When we turn to the second application of Janet's concept, the idea that in hypnosis behavior breaks up into independent systems which fail to affect each other in the expected way, we are faced at once with several important distinctions. The concept has been used, in the first place, to cover the facts of suggested anaesthesia. It has been known for a hundred years, since Esdaile made his remarkable reports from India, that hypnotic suggestion can sometimes completely abolish both the outward behavior and the experience of pain resulting from major surgery. This fact may be regarded as an instance of dissociation between sensory channels and the conscious self; the impulses arising from tissue lacerations encounter a barrier that forbids their usual unchallengeable entry into awareness and motor expression. In the second place, dissociation has been applied to suggested paralyses and immobilities. Here it is implied that a barrier lies on the motor side of consciousness, so to speak, preventing intentions and volitional strivings from reaching the expected motor execution and from overcoming the processes instituted by suggestion. The first usage implies a mere failure of communication, while the second puts emphasis on the failure of centrally initiated processes to over-rule other activities in the way that we consider normal. In the third place, dissociation has been applied to post-hypnotic subconscious actions, to instances in which two processes, one conscious and the other unconscious, are made to go on simultaneously without the interference that we suppose to be unavoidable. Here the insulating boundary lies between two central processes which thereby achieve an unwonted independence. There are thus at least three different ways in which behavior systems are conceived to become dissociated in the hypnotic state.

1. *Anaesthesia.* The most searching investigation into the nature of hypnotic anaesthesia is that of Sears (17), one of the group guided by Hull. Sears used as a painful stimulus a sharp jab on

the calf of the left leg, and measured the normal reaction at various levels of behavior. In the crucial experiments the subjects were hypnotized and given the suggestion that all sensation had disappeared from the left leg. The results may be profitably compared with those just described for post-hypnotic amnesia. The subjects reported themselves all but completely unaware of pain, and they showed practically no sign of the facial flinch and changes in respiration which uniformly appeared in the control experiments. But the two wholly nonvoluntary reactions that were measured, pulse and the galvanic skin reaction, turned out to be abolished much less than 100 per cent by the suggested anaesthesia. As in the case of post-hypnotic amnesia, hypnotic suggestion sets up a real barrier of some kind, but the effectiveness of this barrier is found to be much reduced at the level of involuntary and unconscious processes.

Sears chose for his experiment one of the most dramatic examples of suggested anaesthesia. When we think of the abolition of pain or the production of blindness and deafness we can hardly avoid supposing that hypnosis has brought about a profound physiological change. But dissociation is not bound to follow natural lines of biological cleavage. Equal success can be obtained with suggestions involving the most bizarre patterns of insensitivity such as a blindness for one person in the room, a deafness for certain words, an anaesthesia for arbitrarily chosen areas of the body or one that rapidly shifts from one part to another. We are here faced again by the complete and detailed dependence of dissociative barriers on suggestion. It is not plausible biological systems, it is not even systems already organized in the subject's experience, that become dissociated; it is precisely whatever the operator chooses to outline in framing his suggestion. Dissociation, as exemplified in hypnotic anaesthesia, is thus a cleavage or insulation that shows the same two characteristics that we have encountered before: (1) it is highly docile to suggestion even in the most arbitrary patterns, and (2) its effectiveness declines as one passes from conscious voluntary processes to unwitting involuntary ones such as the galvanic skin reflex.

2. *Catalepsy*. One of the experiences that most surprises the hypnotized person is the seemingly automatic way in which the suggested actions execute themselves. His hands clasp tighter of their own accord, his arm stiffens itself, while he himself remains a passive spectator. Inexperienced subjects are often startled when they discover that this feeling is not an illusion, when they try to

over-rule the suggested actions and find that they cannot do so. The concept of dissociation seems well designed to cover this unusual insulation between conscious intentions and behavior systems which ordinarily submit to them. There are no experiments which serve to clarify the nature of this insulation, and we shall confine ourselves here to a single observation made from common experience. The dissociative barrier between will and suggested action can be lifted at a word from the operator, just as it can be formed by his words in the first place. At the statement, "Now you can unclasp your hands," the barrier between their suggested clasping and the attempt to relax them is almost instantly punctured. It is not permissible, therefore, to consider that hypnotic catalepsy exemplifies a general regional dissociation between major behavior systems. The particular subsystem which by suggestion is placed temporarily beyond the reach of will is always defined by the hypnotist's words; all other systems remain in communication, as it is easy to show by simply asking the subject to perform some act without suggesting that it will be difficult. The facts of hypnotic catalepsy therefore once more exhibit the intimate dependence of dissociative barriers on suggestion. There is no doubt that a barrier of some kind exists: this is attested by the surprise and even fear sometimes displayed by hypnotized persons when they find themselves unable to overcome a suggested paralysis. But the cleavage, whatever its nature, cannot be understood apart from the suggestion which brings it into being.

3. *Post-hypnotic subconscious actions.* Janet himself (7), followed by Morton Prince (15) and Burnett (2), made experiments on post-hypnotic subconscious actions. The general pattern of these experiments is as follows: in hypnosis a subject is directed to perform some mental operation of the sort usually requiring conscious attention, such as writing a letter or multiplying large figures; he is at once awakened, with amnesia for the trance, and is engaged either in conversation or in some set task which again demands continuous attention; the results of the first task meanwhile are collected through automatic writing. With suitable subjects positive results are readily obtained; both the conscious and the subconscious task are correctly executed, the former with no sense of interference, the latter with no trace of awareness, in a way that could not possibly be duplicated by wide-awake volitional striving.

Dissociation here implies the insulation of activities which normally interfere with each other.

The earlier investigators were satisfied to demonstrate a dissociation of consciousness. Recent workers, however, have tried to learn more about the dissociative cleavage. Turning again to the invaluable experiments inspired by Hull, we find in the work of Messerschmidt (12) an interesting parallel to what we have already noticed concerning dissociation. Messerschmidt followed the pattern of Janet, Prince, and Burnett, setting up two mental tasks to be performed simultaneously with the help of post-hypnotic dissociation, but she measured her results not by conscious report but by amount of interference between the two tasks. Having already measured the interference when both tasks were undertaken in the waking state, Messerschmidt was able to show that dissociation in no way reduced this interference, and thus we learn, in Hull's words (10), that "whatever else so-called hypnotic dissociation may be, it is *not* a functional independence between two simultaneous mental processes." Messerschmidt's technique and interpretations have been severely criticized by M. H. and E. M. Erickson (5), who question whether the experiments were arranged in such a manner as to produce the most effective possible dissociative barrier. We may call attention, however, to the striking parallel between Messerschmidt's results and those obtained with post-hypnotic amnesia and anaesthesia, and we may question in our turn whether the outcome would be different if the Ericksons' objections were met. At the level of consciousness dissociation seems to be complete, but we have learned not to be surprised to find it incomplete if not altogether absent at levels such as the interference between two tasks rapidly performed. We are confronted again with the fact that dissociation grows less effective as we pass from the level of consciousness downward.

The problem of dissociation has been attacked in a somewhat oblique way by Barry, MacKinnon, and Murray (1). These investigators argued that the simultaneous performance of two mental activities calls for a "partial dissociation of consciousness so that the two tasks may proceed synchronously with little mutual interference." It was possible, therefore, that persons who possessed the hypothetical trait of dissociability would manifest this not only in susceptibility to hypnosis, tested in the ordinary way, but also in facility at performing simultaneous tasks in the waking state. The

experimenters accordingly devised eight simple tests, such as threading needles and doing the "reversed clock" problem, gave them singly and in pairs, and measured for each individual the loss of efficiency or degree of interference when two were performed at once. There were marked individual differences in the capacity to perform two tasks at the same time, but there turned out to be no significant relation between this ability and the results of the hypnotic tests.

This experiment in our opinion merits two criticisms, and we have therefore made a new investigation with a somewhat different technique.

REPORT OF EXPERIMENT

The first of our criticisms of Barry, MacKinnon, and Murray's paper is directed against its acceptance of hypnotizability as the measure of an aptitude or capacity. One of us has elsewhere (20) rejected this assumption on the ground that purely motivational factors heavily influence all "tests" for hypnotic susceptibility. Special measures have to be taken to exclude the effect of such factors and to isolate the hypnotic aptitude. It was proposed not to make one's crucial comparison between highly susceptible and totally insusceptible subjects since the latter might be influenced mainly by unfavorable motivation.

[It was further recommended that] there be formed two distinctly separated groups; the "somnambulists" or deep trance subjects in whom marked amnesia, anaesthesia, and hallucinations can be produced, and the lightest trance subjects who cannot attain these phenomena even after several trials, but who show eyelid and limb catalepsies which may be accepted as tokens that their motivation is generally favorable. It can be postulated of these two groups that the first possesses hypnotic aptitude in marked degree, whereas the second possesses it to no more than a moderate extent. There should accordingly be significant differences between their average scores on tests which really measure the hypnotic aptitude.

Our second criticism has to do with the method of measuring dissociation in the waking state. Both of the experiments just described set tasks to be done at top speed and measured interference in terms of loss of speed. This introduces a factor not considered important in the older investigations, makes the situation about as different as possible from leisurely hypnotic procedures, and constitutes what might be considered the least favorable setting for disclosing a relation between hypnotic and normal dissociation. Our own waking test was patterned somewhat after catalepsy, one of

the most elementary of hypnotic phenomena, in which one behavior system is activated by suggestion and another by a direct command which is supposed to enlist the subject's will. Instead of suggestion, however, the first prompting to action was made to arise in the subject's own neuromuscular system as an after-effect of exertion, while conscious attention was kept active by the task of reading aloud from a difficult scientific paper. Dissociation, if present, would thus be between two rather different functions, an "inferior" neuromuscular process and a conscious volitional activity. There is at least some ground for maintaining that hypnotic dissociation is typically of the same pattern.

Procedure. If a person is made to sustain for a period of time a fairly heavy weight on his outstretched arm, he will experience, upon removal of the weight, a strong tendency for the arm to fly upward into the air. This movement has the character of an automatism which forces itself upon him, so that considerable effort and attention are required to inhibit it at least in the early stage. The phenomenon in question, known in the literature as the Kohnstamm phenomenon, and here referred to as tensive perseveration, has recently been subjected to a thorough investigation by one of us (18). If the subject is distracted throughout each performance by the task of reading aloud, the extent of his arm's excursion in repeated trials arrives almost immediately at a constant amount. The differences among individuals, however, are very large, ranging from an inch or two of rise to a completely vertical position of the arm. Repetition of the experiment even as much as several weeks later yields a reliability coefficient in the neighborhood of $+0.80$. Despite the constancy of the phenomenon when left to itself, there is an enormous change when subjects are given appropriate suggestions designed to make them believe that their previous performance was highly unsatisfactory. We have to do, then, with an automatism set off by muscular exertion, highly constant in amount if let alone, but easily increased or inhibited by suggestion. The unfamiliar and rather strenuous effort of the arm appears to excite a subsystem which perseverates after the stimulus has been withdrawn. From one individual to another this perseveration exhibits characteristic differences of strength. Preliminary observations indicated some degree of positive correlation between extent of the arm's rise and susceptibility to hypnosis. Our hypothesis was that

greater excursions occurred in subjects who tended to dissociate the activity of the arm, leaving it free from interference.

It will be unnecessary to enumerate the technical details of the test for tensive perseveration, since they are being reported elsewhere (18). The subjects were told beforehand that they would probably experience a tendency for the arm to rise, but they were instructed to continue their reading and pay no attention to what the arm might do. A weight of eight pounds and a work period of 30 seconds was employed in every case. The factor of height was controlled, but we could think of no accurate way short of almost endless experimentation to eliminate the obviously important factor of strength. We measured strength by requiring the subject to pull upward on a dynamometer with his arm in approximately the position used in sustaining the weight. Naturally there were large differences which affected the scores, but we found that several physically slight subjects showed almost no free rise of the arm while some of the more sturdy, for whom the task of holding the weight was relatively easy, gave nearly maximal results. It did not seem, from an inspection of the scores, that corrections for differences in strength would have changed the results reported below.

Hypnotic susceptibility was tested by means of a 15-point scale adapted from previous investigators (1, 4);¹ the suggestions included the usual catalepsies, anaesthesia for touch, amnesia, and a simple post-hypnotic action. Two groups of Harvard undergraduates were employed as subjects. Group A, consisting of 35 men who were paid to serve in this and several other experiments, was given two, and in doubtful cases three, individual hypnotic tests. Group B, made up of 40 volunteers from a class in abnormal psychology, was tested with single individual trials. In both cases the distribution of scores covered the whole range of the scale but was somewhat skewed toward the insusceptible end, with 5 and 7 zero scores respectively.

Results. The rank-difference correlations between tensive perseveration and hypnotic susceptibility turned out to be as follows:

$$\begin{array}{l} \text{Group A } (N = 35) \quad r_p = +.36 \pm .105 \\ \text{Group B } (N = 40) \quad r_p = +.21 \pm .108 \end{array}$$

No comment will be made on these results since they were obtained by the very method of correlation upon which we have just so

¹ Unfortunately the careful study of this problem by Friedlander and Sarbin (6) had not at the time appeared.

severely reflected. An appreciable overlap of motivational factors at work in the two experiments might be expected in view of the loophole left open for suggestion in the instructions which precede the tensive perseveration test. If the confusing effects of such factors are to be in any measure avoided, it is necessary to adopt the recommendation offered above and select two subgroups of subjects who may be expected to differ chiefly in respect to hypnotic aptitude. Should this eliminate all sign of relationship between the tests, we may conclude that our correlations, if real at all, were brought about by common motivational factors. But should this uncover a significant difference, we may believe that a common aptitude has occasioned the result. Accordingly the most susceptible subjects in each group were singled out for comparison with a light-trance subgroup of equal size. The results of this operation are assembled in Table I. Although neither difference has a satis-

TABLE I

COMPARISON OF DEEP-TRANCE AND LIGHT-TRANCE HYPNOTIC SUBJECTS IN TEST OF TENSIVE PERSEVERATION

	GROUP A			GROUP B		
	N	Ave. Rise	σ	N	Ave. Rise	σ
Deep Trance	8	38.0	5.3	7	29.7	3.6
Light Trance	8	24.3	4.0	7	20.5	1.9
Difference		13.7	6.6		9.2	4.1
	Critical ratio 2.07			Critical ratio 2.24		

factory critical ratio, due to the high variability, it is probably not without significance that both are in the same direction. The results are distinctly less discouraging than those obtained by Barry, MacKinnon, and Murray. On the other hand it cannot be said on the strength of this experiment alone that an important relation exists between the dissociation which manifests itself in hypnosis and that which shows itself in the wide-awake performance of two simultaneous actions. The oblique approach to dissociation through hypnotic susceptibility has not yet yielded final answers.

Before leaving these last experiments it is of interest to notice that Janet himself would not have accepted the hypothesis on which they are based. The hysterical person, he believed (8, *p.* 295), hence the person most susceptible to hypnosis, was by reason of his lowered psychic force and the retraction of his conscious field quite incapable of performing two simple actions at once. This lack of uniformity in the applications of Janet's concept serves to warn us once more against its dangerous versatility.

CONCLUSIONS

We are now in a position to make our final estimate of the concept of dissociation as applied to the facts of hypnotism. We have seen that dissociation, which originated with Janet and was intended to gather into one scheme the numerous symptoms of hysteria, has been applied to hypnosis in a variety of ways. We have distinguished two main applications, one that treats the whole hypnotic trance as an episode separated from the rest of the person's experience by boundaries of amnesia, and one that considers hypnosis a state in which behavior breaks up into relatively insulated subsystems. Within the first application belong the facts of post-hypnotic amnesia, and these have already been clarified by several apt experiments. Under the second usage go a variety of phenomena: first, hypnotic anaesthesia, which is conceived as a failure of impressions to reach consciousness and to affect behavior in a way we consider normal; second, suggested catalepsy, conceived as a failure of intention or volitional strivings to reach the expected motor fulfillment and to over-rule the processes initiated by suggestion; and, third, post-hypnotic subconscious processes or the simultaneous performance of two actions which normally interfere with each other. This last application has given birth to experiments based on the idea that the ability to perform two simultaneous actions in the waking state might furnish a clue to hypnotic susceptibility.

At the outset it was theoretically possible that dissociation applied only to consciousness, the functional barriers created by hypnosis being without influence below the level of verbal report. It was equally possible that the dissociative cleavages ran clean through the behavior mechanism, establishing an insulation of systems which precluded communication among them at any level. The truth lies between these extremes. Hypnotic suggestion is capable of

abolishing conscious recollection of the trance, of establishing anaesthesia even for severe tissue lacerations, of rendering volitional strivings curiously ineffectual, and of insulating an intelligent sub-conscious process so that it does not distract conscious attention. At the level which we consider highest, that which is accompanied by awareness and volition, behavior can be divided into almost completely association-proof compartments. Were we content with these phenomena the concept of dissociation might well hold its historic place as the key to hypnosis. But on the debit side of its ledger belong other facts: the effects of practice and the normal interference between two mental tasks pass through the alleged dissociative barrier without the slightest obstruction. Between these extremes lie perhaps the most interesting phenomena of all, those functions which are partly but not completely affected by the suggested cleavage. In this category belong the galvanic skin reflex and the changes in pulse rate which normally accompany pain. Hypnotic anaesthesia can diminish but not abolish these responses, the galvanic skin reflex being somewhat more immune to suggestion than the pulse. Here also belong the facts disclosed about the relearning of material memorized under hypnosis and then shut off by the barrier of post-hypnotic amnesia. In two different investigations relearning took place with about half the promptings required for normal initial mastery, suggesting that dissociation acts for such material more like a filter than like a wall.

These findings bring us to our first conclusion. There is no doubt that hypnotic suggestion can bring about a separation of activities in a way that could not be duplicated by ordinary volition. This separation, however, is most marked for processes that lie within the realm of consciousness and volition; it diminishes to the vanishing point as one proceeds to those unwitting implicit processes that give little token of themselves in awareness and little foothold for volitional influence. Only with this qualification can the concept of dissociation be applied to hypnosis.

Our second conclusion is derived from another characteristic which we have repeatedly observed in our survey of hypnotic phenomena. Dissociative boundaries, we have noticed, by no means necessarily follow natural lines of cleavage; they do not have to surround innate biological systems nor are they required to enclose

systems built up in the person's experience. Instead, the pattern of dissociative barriers is in a great many cases directly dependent on what is suggested, following in minute detail even the most bizarre conceits of the operator. Thus post-hypnotic amnesia may be established for a single arbitrarily chosen event within the hypnotic trance, blindness may be suggested for a single object in the room, deafness may be set up for one of two languages with which the subject is familiar; in short, the operator can impose a dissociative barrier almost wherever he chooses. This fact tends to shift our interest from dissociation to suggestion which would seem to be the more inclusive even though not the more definable concept.

The value of a concept, even when it successfully orders a number of facts, may not be very great unless it leads on to that fuller understanding which we call explanation. In Janet's hands dissociation achieved this purpose in a way which at first seemed rather satisfactory: it suggested the hypothesis of diminished psychological energy causing the behavior mechanism to disintegrate into its natural subsystems. The progress of physiology, however, has done little to fortify this hypothesis, and such speculations have fallen into scientific disrepute. It seems to us that the concept of dissociation either leads straight into physiology, as Janet made it do, or else gives place to suggestion and sinks to a position of minor importance. It should be, in short, either a key concept or an unimportant one. That it cannot aspire to the former position is our third conclusion. We can support this not only by pointing back to the matters discussed in this paper but also by calling attention to certain other hypnotic phenomena to which dissociation never has been, and so far as we can see never could be, applied. We need mention only positive hallucinations and post-hypnotic actions, in which a system is overactivated rather than walled off, and hypnotic hypermnesia, in which there appears to be greater rather than less freedom of association, to find ourselves beyond the limits of a fruitful application of Janet's original idea. Whatever the nature of the hypnotic state, it does not seem to be adequately conceptualized by dissociation. The pathway to the theory of hypnotism passes first through suggestion and then, since this is of little assistance, to some further concepts capable of ordering the facts. What these concepts may be is the topic of another paper (21).

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THE EFFECTS OF WAR STRESS UPON CHILDHOOD AND YOUTH

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UNLESS the Axis powers are able to gain a foothold on some part of the American continent, *e.g.*, Greenland or Alaska, it seems very unlikely that American cities can be subjected to bombing attacks on anything more than a token basis. Nevertheless, since such token attacks may, and probably will, be attempted sooner or later, it may be of value to consider some of the attendant problems which have arisen in Britain and to review some of the psychological reactions of children to bombing and other conditions arising out of war.

The facts at our disposal from British sources fall into two main groups: the effects of exposure to air-raids, on the one hand, and the effects of disruption of the child's frame of security on the other. Of these two potential sources of psychological stress, the latter has proved in actuality to cause the more severe and prolonged reactions, while exposure to raids, though producing some acute effects, has not given rise to the expected amount of disturbance.

EFFECTS OF AIR-RAIDS

It had been anticipated that children would react very unfavorably to the actual bombing experience conceived in terms of noise, crashing debris, unfamiliar sights, and so forth. No report has appeared in regard to the effects of bombing noise as such on very young children—under two years—but older children appear to be unexpectedly resistant to such stress. It seems that, on the whole, children of three and up have adapted themselves exceedingly well to the unfamiliar sights and sounds of air-raids, and that older children and adolescents often actually regard them as a great thrill. This has been true, though, only in cases where the adults in contact with the children have behaved with self-control. It

has been no surprise to find that panicky reactions on the part of adults make for like behavior in their children.

It has been observed by Anna Freud (5) at a nursery home which she runs in London that the children who show most anxiety in regard to air-raids are not necessarily those who have had the actual experience of being bombed at close quarters. She cites the story of a boy aged $4\frac{3}{4}$ who was one of the few children in the home who had not been actually bombed. He appeared to be the most nervous of all of them, whereas a little girl playmate, aged $4\frac{1}{2}$, who had had a very narrow escape when a bomb blew the roof off her house, attempted to reassure her friend and advised him to pull the bed clothes over his head when the guns got noisy. This seems to bear out an observation which has been made by several psychiatrists (8) that many adults, as well as children, react with greater anxiety to the idea of being bombed than to the actual experience. The fantasy is more terrifying than the reality; the unknown danger than the known. Of course there have been acute reactions in children, as in adults, to severe traumatic experiences. Children have been buried in debris or had to rush in the night from blazing homes, and it would indeed be strange if such experiences failed to produce a traumatic reaction in the child. Nevertheless, the results—acute anxiety, depressive reactions, and a few cases of hysteria—have usually cleared up very quickly except where there was a predisposing neurotic tendency or where the bombing experience also involved disruption of the child's frame of security, e.g., loss of a parent or brothers and sisters. One of the writers has analyzed three individuals who, as children, had markedly unfavorable reactions to bombing in the last war. One of these had already shown signs of a neurotic personality and in the other two cases separation from the parents was also a factor and certainly the major one.

Several reports (8) have come from the much bombed city of Bristol. In February, 1941, an investigation by questionnaire of 8000 school children who had been exposed to air-raids showed that about 300 (4 per cent) had symptoms of nervousness attributed to raids. The symptoms shown were anxiety, trembling, crying, enuresis, headache, vomiting, and dizziness. Half the affected children were between the ages of 5 and 7, a third between 8 and 10, a sixth between 11 and 14. On the other hand, the Medical Officer of Health in a London district with a child population of

12,000 to 15,000, where bombing had been indiscriminate, has reported (8) that he had not come across cases of morbid reaction to bombing in children.

It was reported also from Bristol (8) that after the first severe raids children in a nursery school lost weight, were overexcitable, more quarrelsome and prone to tantrums, but by the end of January, 1941, in spite of further raids, these children, all under five, had regained their weight and their behavior was steadier again. There is a consensus of opinion that children show great adaptability and recover quickly from air-raid effects if simple and sensible measures are taken.

EFFECTS DUE TO DISRUPTION OF THE CHILD'S LIFE PATTERN

In contrast with the direct effects of bombing, the effects of disorganization of the child's basic frame of reference have been, if anything, more widespread and more severe than was anticipated. In particular, the psychological effects on children of evacuation to safety areas were completely underestimated by the authorities in both evacuation and reception areas.

The problems presented by disruption of the life pattern can be considered under two heads—conditions in the evacuated cities and conditions in the reception areas.

1. *The Evacuation Areas.* As mentioned above, the most serious cases have been those where there was both traumatic bomb experience and disruption of the life pattern. The loss of one or both parents, or of siblings, the disorganization of life owing to the home's being destroyed are serious matters for a child of any age, and the effects are on a par with what would be expected after a similar peacetime catastrophe.

Separation from the parents, and particularly sudden separation, seems to be the most serious cause of neurotic reactions. Anna Freud (5) describes the case of a child, aged 3+, whose mother was injured in a raid and sent to a hospital. The child was sent to the nursery and told by the father to be a brave boy and not cry. The boy did his best to follow these instructions, but instead he developed a compulsive tic which grew under the observer's eyes in a distressing manner. He first repeated without cessation the phrase, "My mother will come and put on my hat and coat and take me home." If no one contradicted him all was well but

if anyone tried to explain that his mother would not come he burst into tears. The phrase gradually became longer and more particularized as other details of clothes his mother would put on were added to the list. On the third day of this behavior it was suggested to him that he need not repeat this phrase incessantly. Again he did his best to comply, but his flickering lips and expressive gestures indicated that the same formula was still going on. By the fourth day the formula was reduced still further to slight movements of the lips and to token movements of the hands representing the actions of dressing. During this time the child took absolutely no notice of the other children and could not be persuaded to take any food except milk. Fortunately, the mother's injury was not severe and after about ten days she was able to leave the hospital. She was persuaded to come and stay in the nursery with her child. At first he would not let her out of his sight and would not allow anyone else to touch him, but after a few days he started to take an interest in the play of the other children and soon allowed his mother to go away for an hour or two, though at first he showed some signs of his old anxiety until she returned. This weaning process continued gradually until, in about two weeks, he showed no anxiety at her coming and going and was content to stay in the nursery without her, though fortunately she was able to visit him frequently. This case very well illustrates that separation from parents need not be traumatic if it comes about gradually and with adequate preparation.

Other causes of disorganization have been the bombing of the home and the resort to shelter life. The loss of the home has given rise to anxiety reactions in some children and to an apathetic reaction in others. In still others the reaction has been aggressive. In fact several observers have reported (8) that in nursery homes and schools after a night of bombing the children tend to be more noisy, unruly, and quarrelsome than usual, but this reaction usually lasts only a few days.

The effect of shelter life on the younger children has been mainly physical, consisting in disturbed sleep, unsuitable food, insufficient air, and the general unsanitary conditions to be expected. For instance, among the nursery groups of Anna Freud (5) there was usually some sign of "shelter-bronchitis" in the children when they were first admitted. In older children the effects have appeared largely in unruly behavior, but as the shelters became better organ-

ized special areas were marked off for children and a suitable person was put in charge of their activities.

During the early months of the war the general disorganization of the period and the anxiety concerning raids that might come but did not were reinforced for children remaining in cities by the fact that all the schools were evacuated to the country and most of the usual recreational activities, clubs, amusement centers, and cinemas were closed. Children from five upwards were therefore roaming the streets throughout the day with no provision for the occupation of their time. During those early months there was much hooliganism among such children.

2. *The Reception Areas.* Possibly because a marked reaction among evacuated children had not been anticipated, there are more—and more comprehensive—reports about the psychological reactions in evacuated children than there are about those who remained behind.

A study by Susan Isaacs, "The Cambridge Evacuation Survey" (7), and two papers by Theodora Alcock (1; 2) have covered this field very thoroughly, and other less detailed reports bear out their findings. In the first week of September, 1939, 750,000 school children, 542,000 mothers with young children, and about 12,000 expectant mothers were evacuated from crowded industrial districts in accordance with the Government's plan. Almost immediately, however, the reverse process began, and by January 1, 1940, 88 per cent of mothers with young children and 46 per cent of school children had returned to their homes. The causes for this reversal were numerous: the dislike of townspeople for the "discomforts" of the country, friction between evacuees and local inhabitants, the loneliness of the husbands remaining at home, and principally, of course, the absence of the expected air-raids. This return of evacuees to their homes continued, though in decreasing numbers, through the spring of 1940.

The causes of emotional strain in evacuated children are:

1. Separation from parents, home surroundings, and friends. The feeling of loss which this entails has been entirely conscious in some cases, even when not openly expressed. In others, the child has denied his anxiety to himself—in fact the more acute the feeling the more liable it is to be repressed—and it has appeared in the guise of symptoms such as enuresis or as such disorders of behavior as truancy and pilfering. Another factor present in a number of

children, disturbed as a result of separation, was the feeling, conscious or unconscious, that they had been sent away because they had been "bad."

2. Fitting into a strange household having different habits and possibly of different socio-economic status. Not only has the evacuated child lost the security of his familiar home background, but he can never feel completely safe in his tenure in the new surroundings. His own mother, even though she may neglect or ill-treat him, will defend him against outsiders, and she will not, except in rare instances or under the stress of war, give up her possession of him. He has at least a place on which he can depend. He may be disobedient or bad-tempered or destructive; he may wet his bed; for all these things he may be punished—but he will not be cast out. In a foster home, on the contrary, he may be ejected for any of these reasons or for a host of others, so that he may be faced with a double or even with multiple rejection. Of the 598 evacuees referred for child guidance in one area, only two had remained in the same billet since evacuation.

In addition, the child is often bewildered by a change of standards in his new environment. What Susan Isaacs has called "the dear familiar things of everyday life" are different, and if he accepts the new order of things too whole-heartedly he is implicitly rejecting those whom he loves, so that divided loyalties add to his burden.

3. Strain thrown on foster parents who, in addition to adjusting to war worries (*e.g.*, calling-up or sudden unemployment of husband, anxiety for relatives in the services, difficulties with regard to food or prices, etc.), were suddenly faced with accommodating one or more extra children in their homes, who in some cases introduced infectious or verminous conditions. Anxiety and irritability on the part of the foster parent would make the task of the child in adjusting himself doubly difficult.

4. Disorganization of educational facilities. Although the evacuation plan was devised with the idea of keeping educational groups intact, this was not in fact always possible. The evacuated school usually had to share premises with a school in the reception area, which made for great overcrowding, and in some cases the children had to work in shifts.

5. The lack of recreational facilities to which the children were accustomed in their home surroundings, aggravated by restrictions due to the blackouts. Since the foster parents kept them off the

streets after dark, the children complained of the long boredom of the winter evenings. At such times homesickness would be especially felt.

The two surveys mentioned above agree to a considerable extent as to the types and frequency of the adverse reactions of children to evacuation.

The Cambridge Survey was undertaken with the object of investigating the conditions of failure or success in the evacuation scheme and of making suggestions for future projects. The authors felt as a result of their work that the success of any scheme was bound to depend very largely on the appropriate distribution of the evacuated children to the foster homes available, for, while some children do well in any reasonably good billet, others need very careful placing with suitable foster mothers. Also, while one home is suitable for one type of "difficult" child, other types may need quite different sorts of homes. They found, for instance, that the shy, seclusive type of child did best in an orderly conventional home, while the aggressive type was best placed in a home where there were other children and plenty of activity. Apart from the careful selection of billets for individual children the main recommendations resulting from the Survey are:

1. Members of the same family should, if possible, be in the same billet or at any rate near at hand.
2. School units should be kept together as far as possible.
3. Parents' visits to their children should be encouraged by granting travel facilities.
4. In reception areas a temporary hostel should be available for children who are unsuitable for immediate billeting due to illness, uncleanliness or misbehavior; an emergency home for children who have to move suddenly out of a billet, where they can stay until a new billet is found for them; and, finally, a permanent home for difficult children. The Survey showed that about 2 per cent of children are sufficient behavioral problems to be unsuitable for any private billet.

The figures for the numbers and types of nervous reaction agree fairly well in the various surveys. The figures here are from Alcock's reports (1; 2). Miss Alcock was appointed as child guidance officer to a large rural area in the Eastern Counties with a population of 60,000. In her district there were at first 15,000 city children though the numbers dwindled later to 7000. Of these,

598 were referred for psychological investigation between September, 1939, and June, 1941. In the early months the nuisance value of the child seemed to be the main consideration in the referrals. Consequently enuresis and unruly behavior topped the list. Later, foster mothers and local authorities became more sympathetic and there were referrals of anxiety and depressive cases.

Alcock classifies the cases in these groups:

Psychosomatic	34 per cent
Psychoneurotic	21 per cent
Behavior disorders ..	24 per cent
Educational difficulties	12 per cent
Social problems	9 per cent

Among the psychosomatic group were included cases of enuresis, encopresis, hysterical vomiting, fits, and tics. Of these, enuresis was by far the commonest symptom. Two hundred and thirty-five cases were referred to the child guidance center and in addition at least 500 were treated in their billets. It was noted that the cases of encopresis (12 in number) were associated with particularly unsuitable foster homes or harsh foster mothers. According to Burns (4) this symptom has become quite a problem in some areas.

In the psychoneurotic group were 137 cases. Anxiety and depression made up the bulk of these. There were a few cases of general nervousness, and two each of hysteria and obsessional conditions. Some of these cases were very acute and were the direct result of some bombing experience followed by separation from their parents; but except where there were predisposing factors these traumatic cases cleared up very well.

The educational difficulties consisted mainly in a lack of the power to concentrate, and some children seemed to have difficulty in auditory association. A temporary lack of concentration has been noted by several observers to occur in school children after raids in the neighborhood and goes along with the increased aggressiveness and unruly behavior mentioned above.

Alcock finds that in general children who have suffered direct physical danger tend to react with difficult behavior, while those whose main trouble was separation seem to produce psychoneurotic difficulties. She mentions that she found several cases where a sense of guilt at leaving the parents in the danger area was a factor. She finds that reactions due to bombing are much easier to clear up than those due to separation.

In the Cambridge Survey of 155 children referred to a clinic, in 75 children (48 per cent) the complaint was enuresis either alone or with other symptoms. There were also 19 cases of encopresis, making a total of 94 cases (over 60 per cent) of incontinence. Pilfering was another frequent complaint and was mentioned in 25 cases (16 per cent). Other symptoms that were listed under various heads such as aggressiveness, rudeness, quarreling, etc., have here been classified together under the heading of aggressive reactions. Complaints of this type were made in 56 cases (33.5 per cent) while anxiety reactions of various types, including homesickness, were complained of in 42 cases (25 per cent). It is interesting to note that in a great many of the cases of homesickness the history revealed some trouble in the child's own home, e.g., drunkenness, quarreling and violence between the parents, broken home, etc.

With regard to the age and sex distribution of the cases in Alcock's series boys outnumbered girls by 60 per cent to 40 per cent, while in the Cambridge Survey this discrepancy was even more marked, the figures being 66 per cent boys to 34 per cent girls. In Alcock's survey the majority of cases referred to the treatment clinic occurred in the 7-11 age group; but in most other reports this group has been relatively free from trouble. The Cambridge Survey, where a special investigation was made into cases with a markedly unsatisfactory adjustment to the billet, shows that by far the largest number of such misfits were in the 12-16 age group.

Most of the above information comes from the first evacuation which was carried out hurriedly in the first week of September, 1939. In May, 1940, the Government again made efforts to get children away from the cities. Guided by the experience gained, efforts were made in the second project, which continued all through the summer and autumn of 1940, to secure better cooperation between the evacuating authorities and those in the reception areas. Instead of a mass evacuation carried out in a few days, children were sent away in dribblets—small parties leaving each day with their teachers or in the care of social workers. In this way it was possible to provide for the physical examination of the children before they left the cities, and information regarding any special difficulties could be sent with them for the information of the billeting officers in the receiving areas. In the meantime, also, lists of the accommodations available had been drawn up, and special panels had been compiled of foster mothers prepared to take chil-

dren who might be difficult. According to information received recently this second wave of evacuation has met with much greater success and the children have usually been able to make a good adjustment to their billets. Also it must be remembered that by August, 1940, raids were actively in progress, so that there was a greater incentive to parents to send their children away and to keep them away.

JUVENILE DELINQUENCY

A special section is devoted to this subject not because it is regarded as a separate entity but because there has been so much comment in the press about it and because the figures seem astonishingly high. During the first 12 months of the war there was an increase in indictable offenses of 41 per cent in children under 14, of 22 per cent in the 14-17 age group, and of 5 per cent in the 17-21 group. In age groups above 21 there was a drop in the incidence of crime. A similar, though less extensive, increase was noted in the 1914-18 war and most authorities (8) have been at pains to attribute the increase to such factors as absence of one or both parents on war-work, closing of schools in evacuation areas, lack of recreational facilities in both evacuation and reception areas, opportunities provided by the blackout, preoccupation of the police with other duties, etc. This view was strongly supported by R. D. Gillespie in his recent Salmon lectures [see also (6)]. However, one cannot but surmise that these are not the sole, nor perhaps even the main, causes of the increase. It would seem rather to be a symptom of a deep latent anxiety.

DISCUSSION

From the above survey it is seen that, while young people in England were surprisingly resistant psychologically to the physical dangers and privations of war, they were more vulnerable by far than had been anticipated to certain social privations and separations. It is of course undeniable that the bodily hazards which the war involves are crucially important to health and life; at the same time these do not appear to have made the inroads upon the psychological health of the children and youth of England that was expected.

However, a healthy note of skepticism should be maintained, both on account of the possible element of propaganda involved,

and also because it is impossible at this time to judge the ultimate effect of the experiences which these children have undergone. It may well be 15 or 20 years before any true estimate can be made of the psychological damage that has been done. Nevertheless, since this is the only information which is available to us at this time, it must be accepted for the present. Taking it at its face value this fact might be accounted for by the child's greater naïveté, relative to the adult, concerning the dangers which war involves. Moreover, the youngster's more active curiosity and love of adventure could tend to make the experiences of war and especially of air-raids something of a thrill. Repetition of such experience would find him more adaptable than adults.

The finding is also interesting in the light of a related one to the effect that the anticipation of air-raids has often caused greater nervousness than the raids themselves. This fits well into certain theoretical expectations. Anxiety is by its very nature a phenomenon of anticipation and it would thus not be surprising that those individuals who are especially susceptible to it should be even more disturbed by the possibility of danger than by its actual presence. In practical terms an observation of this kind should lead to a program of desensitization through the medium of education and drill. If by these measures the dangers which lurk can be brought out into the open anxieties should be proportionately reduced.

The most important of the psychological effects of the war upon children seem to have been the result of social separations. While it was always true that when young men were enlisted in military service they necessarily left home and likewise left behind them sweethearts, parents, and other loved persons, the present war has had the peculiarity of broadening the scope of such separations. Here for the first time it has been necessary on a large scale to evacuate children from zones where air-raids were likely.

The significance of such separations is great even for adults, as one of the writers was well able to observe both in himself and other Americans who were stranded in Europe at the time of the outbreak of war in September, 1939. Most tourists made a frantic effort to obtain passage to the United States and most were therefore disappointed. The offices of the various consulates and shipping companies were constantly bombarded by impatient and bewildered Americans by contrast with whom the calm of the English and Scottish attendants was remarkable. After it had struck him that

this situation was something of a paradox, the writer talked it over casually with one of the clerks in a shipping office. In simple language the clerk clinched the whole matter. "Well," he said, "I really don't blame you Americans. We are, after all, at home." The force of this view was obvious. True insecurity arises, even in adults, more from the separation from intimates upon whom they are dependent for emotional support than from the dangers represented by a falling bomb. It is somehow not possible to adopt that calmly resigned attitude that a bomb will hit you only if it has your name on it unless you happen to be living in a house that also bears your name-plate.

This consideration becomes even more pertinent when young individuals are in question. Because of their incompletely formed characters they are less able to tolerate the anxieties which separation entails. This conclusion is supported by the highly interesting recent study of Shirley and Poyntz (9). For the child the disruption of family ties and school connections may have the appearance of a world gone to pieces. The obvious implication is that the evacuation of children from large cities in anticipation of air-raided dangers must be carefully weighed and circumspectly executed since the measure in itself involves danger of no minor kind. It is of interest in this connection that the German evacuation procedures have taken the form of camping rather than billeting; that classes have apparently been kept intact and sent away with their teachers; and that the children have often been accompanied by the Hitler Youth leaders who had been their counselors in extra-curricular and camp activities at home (3).

In connection with the feeling that life has lost its pattern, we may wonder whether one important aspect of the great wave of delinquency which the war has engendered must not be sought in the insecurity to which children and youth have been subjected. No doubt other factors, such as the relaxation of discipline due to the absence of parents and the need for excitement which gang life may provide, are also to be considered, but it is more than possible that the *social* organization of the gang may in some measure contribute a kind of substitute security for the crumbling social structure of the world in which the young person finds himself. Possibly one can interpret the aggressive behavior of the delinquents, particularly in so far as it manifests itself in *gang* activity, as an expression of *anxiety*.

It is at this point that there begins to emerge what would appear to be the most crucial factor regarding the security of children and adolescents. This is the interdependence of the child-adult relationship. Just as in the case of those social separations mentioned above the relationship of parent and child looms large, so even when *no* separations are in question the morale of the child must be considered as still functioning within a child-adult context. Where the morale of the adult is high, the morale of the child is very apt to be high. Where the former is low, the latter is likely to be low. The experience of a young man himself a child at the time of the last war illustrates this point tellingly. He was at that time living with his family in a small Polish village that was constantly being occupied and reoccupied. The incessant danger to which the family was exposed caused them to live like so many hunted animals. His father, mother, and older relatives appeared as helpless as himself and this increased his anxiety enormously. When shooting was rife in the town one day and they were all hiding in a cellar, the boy became thirsty and attempted to leave their shelter to go for a drink at the town pump. The father forbade him and, when the boy insisted, slapped him. Instantly it seemed to that child that his father became a real parent again and with the reestablishment of that vital relationship his thirst not only disappeared but his general anxiety diminished. His security was restored.

Apart from the importance of such adult attitudes upon the psychological security of children it would seem that one of the most helpful expedients which adults can utilize to decrease anxiety in the child is to provide them with suitable *activities*. Such activities may be regarded as a way of draining off tension. If sufficiently concrete they could also serve to forge a link between the efforts of the adult and the life of the child. Those of us who were youngsters in 1917-18 may recall how important for us was the school-sponsored collection of peach stones to be used somehow in the making of gas masks. Activities of this kind in which the child seems to share the fate of the grown-ups may have great potentialities for building morale since by this route the child may achieve a greater solidarity with his elders and thus acquire an increased sense of security.

Such considerations concerning solidarity based upon common goals become even more significant when not children but *adoles-*

cents are in question. Because the boy or girl in the teens is struggling so intensely to make the transition from childhood to maturity, the whole problem of the relationship with adults is an acute one. Unlike the child who is dependent upon every single bit of behavior of the elders, the youth look rather to the implications of their behavior—their goals, their aims, and their ideals. It is no doubt for this reason that the disillusionment of youth as regards war-aims is a problem of paramount importance for morale. Similarly important is the great uncertainty with regard to personal careers and marriage which the war engenders in young men and women. Here too lies an important field where the building of morale must proceed through the restoration in youth of a significantly live faith in their own prospects and in the future of the country for which they are asked to fight so that they will not participate half-heartedly, if at all, in the enterprise.

To make such recommendations concrete is not easy, but that steps of this sort must be taken is clearly shown by recent activities in Great Britain. The organization of youth movements of various kinds has been growing apace. It is recognized there that the shutting-down of boys' clubs and the discontinuance of scout activities, etc., was a great mistake. Such movements should, if anything, have increased rather than diminished. In this respect the Fascists were clearly far-sighted. The vital psychological force of such youth organizations is great. It consists in increasing security by increasing the feeling of *belongingness*. Where so much is happening to disrupt the social organization of daily life the fact of belonging to some group in which one can play a significant part and where one can make what appears to be a contribution is, if nothing more, a strengthening tonic. If properly conducted such groups may, of course, also actually make practical contributions of various kinds.

Closely related to the *social* safeguards of youth organizations is the integrating force of the goals which they may provide. Where those important standards which were formerly held to be inviolable seem to be threatened and where family ties are considerably loosened, such goals may be invaluable. Framed in accordance with the common cause, they could increase security by providing a basis for *personality integration*.

CONCLUSION

On the basis of the experiences in England previously surveyed, as well as from general psychological considerations, it may be expected that the psychological security of children and youth may be fostered as follows:

1. Anything that can be done to maintain or increase the morale of the adult will inevitably be reflected in that of the child and of the adolescent.

2. Adolescents in particular, and even children in some measure, should be organized into clubs, societies, and associations calculated to instill a kind of group security and relate concretely the life of these younger individuals to that of their elders. The goals of such organizations worked out in accordance with the common cause of the country may also provide an integrative frame for the activities and interests of youth.

3. The very young child must be allowed to remain as close to his parents, siblings, and school-fellows as is at all consistent with the physical dangers involved and he should furthermore be provided with concrete tasks which, as in the case of his older brothers and sisters, link him positively, even if only in a small way, to the world-stirring events of which he is inevitably a part and which must otherwise inspire him only with negative feeling.

SUMMARY

1. The effects of bombing on children, though severe in many cases, have been less widespread than had been expected.

2. On the other hand, the adverse effects of evacuating children to the country have been rather widespread and severe, and far in excess of what was anticipated.

3. Reactions to physical danger have tended to be of the aggressive type (unruliness, pilfering, etc.), while reactions to separation have been of the psychosomatic or psychoneurotic variety.

4. Nervous conditions resulting from exposure to air-raids have yielded more readily to treatment than those due to separation, though in both groups a previous neurotic tendency has made treatment more difficult.

5. In some reception areas the majority of cases referred for treatment were between 7-11; in other areas this age group appeared to

be the least affected. The greatest proportion of children who found difficulty in adjustment to their billets was in the adolescent group.

6. Between 60 per cent and 66 per cent of the cases needing treatment among evacuated children have been boys.

7. There has been a marked increase in delinquency among children under 14 years (41 per cent), a lesser increase in the age group 14-17 years (21 per cent), a mild increase in the 17-21 age group, and a decrease in age groups over 21 years.

8. It is suggested that the increase of delinquency is a symptom of anxiety and insecurity and that the "gang" gives some sort of frame of security.

9. The "gang" should therefore be given a social instead of an antisocial direction—organized youth activities have proved very successful in England.

10. In view of the finding that anticipation causes more disruption than does actual danger, it is suggested that children should be desensitized through education and drill.

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THE NATURE AND EFFECTS OF SOCIAL INTERACTION IN SCHIZOPHRENIA

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INTRODUCTION

IN man, social interaction (interpersonal relations) occurs in two ways:

1. *Nonsymbolically.* The organism responds directly to the behavior of other organisms which act as stimuli. Nonsymbolic interaction is the type of social interaction found in lower animals, and in most cases occurs on a reflex or instinctive basis.¹ Though it occurs in man to some extent, it is probable that even presumably nonsymbolic interaction has at least unconscious symbolic significance to human beings. An example of nonsymbolic interaction in man occurs in crowd behavior, where the sight of fear expressed in the features of another increases one's own fear.

2. *Symbolically.* The organism indirectly responds to the behavior of other organisms, in terms of the meaning of the gesture, *i.e.*, the referent (the thing symbolized) which the symbolic behavior stands for. In a process of symbolic interaction, for example, A has an idea (referent) which he wants to communicate to B; he therefore employs a culturally determined symbol which stands for the referent in question, *e.g.*, "Please help me lift the box." In turn, B responds to A's overt behavior, not directly to the behavior itself, but rather in terms of the referent for which it stands, *e.g.*, he will then grab one end of the box and help lift it, if he understands English; otherwise he would not know what to do because he would not know the referent of the vocal gestures. Symbolic interaction is the basic type of social interaction found in man, and perhaps is also present to some degree in the other higher primates.

It will be seen that there are a number of culturally determined aspects in a phenomenon of symbolic interaction:

1. The nature of the *symbol* employed.
2. The *referent* the symbol stands for (its meaning).
3. The type of response suitable to the symbol.

¹ *E.g.*, *vide* K. von Frisch, "The language of bees," *Science Progress*, 1937-38, 32, 29-37.

The hypothesis in terms of which the problem of this paper was formulated is as follows: Human social life is fundamentally based on symbolic interaction, for it is by this means that we engage in group activity, *i.e.*, cooperate in the pursuit of the common goals, in the absence of genetically determined behavior patterns such as exist in lower animals. In most social situations we act the way we do because we know that certain behavior has a customary meaning to all the individuals involved in an activity, and we also know what response to that behavior we may expect from the others.

PROBLEM

In order to test the hypothesis given above as to the function of symbolic interaction, the writer investigated the social interaction of schizophrenics; *i.e.*, an attempt was made to verify hypotheses concerning normal function by investigating pathological conditions, according to the principle of concomitant variations. Schizophrenics were chosen because, as a result of the introversion found in schizophrenia, the individual develops his own symbolism. Consequently the problem was raised: If human social activities primarily depend upon symbolic interaction, and if the symbolism of schizophrenics is different from that of the average individual, how would a schizophrenic society differ from that of a normal society in its social interaction, social relations, social organization, and customs?

PROCEDURE

At the City Sanitarium in St. Louis,² the same group of white, American-born, male schizophrenics were brought into a room every weekday from March 20 to June 6, 1941, at 2:00 P.M. until 4:00. In the room (which was a ward dormitory, and had the beds pushed back for purposes of this experiment) were three bridge tables with four chairs at each table. On the tables were games so chosen that any number from one to all might play. Each table had a deck of cards, a checker game, and a box of dominoes. Also, one table had Chinese checkers, and another had lotto. The patients were brought to the corridor outside the room by their attendants, and at 2:00 o'clock the door would be opened and the patients told to enter (by the ward attendant, who remained outside

² The writer would like to express his appreciation to Dr. F. M. Grogan, Superintendent, and Dr. L. H. Kohler, Medical Director, of the City Sanitarium, who generously placed all the facilities of the hospital at his disposal.

the room). The writer would be seated at a bench behind the open door (the most inconspicuous place available), with a notebook in which to record his observations. When all were in the room, the writer would close the door and resume his seat without saying anything. The men were left free; no suggestions were made as to seating or activities. On the first day of the experiment, the writer merely said, "You will come here every day." This simple and crude procedure was adopted for lack of adequate research facilities.

The men chosen represented all the types of schizophrenia and were in all stages of deterioration. Also, they were not too violent, since the writer had no attendant in the room with him because of the desire to keep at a minimum the modification of the situation by extraneous factors.

Following is a list of the men involved:

Original group:

CM, paranoid,³ 36 years old. Clean; speech spontaneous, relevant, and coherent; average intelligence; intact sensoria; placid in mood; delusions of persecution. Institutionalized 6 years.

HD, paranoid, 36 years old. Clean; gestures and grimaces; neologisms, speech spontaneous, relevant, and coherent; average intelligence; sensoria intact; usually placid, though sometimes excited; visual and auditory hallucinations; delusions of persecution and grandeur. Institutionalized 7 years. Escaped from institution May 18.

LW, paranoid, 41 years old. Neat; usually with hands on thighs, head bowed; antagonistic; activity slow; speech retarded, circumstantial, stilted, and coherent; average intelligence; sensoria intact; delusions of persecution and grandeur. Institutionalized 5 years. Transferred to another institution, May 5.

TM, paranoid, 69 years old. Clean; confiding; quiet; speech spontaneous, circumstantial, and coherent; intelligence average; sensoria intact; mood placid; auditory hallucinations; delusions of persecution and grandeur. Institutionalized 34 years. Dropped because of illness, May 7.

WF, catatonic, 39 years old. Clean; grimaces and gestures, waxy flexibility, usually sits with hands on thighs and head bowed; speech retarded with scattering; intelligence average; sensoria poor; mood placid; hallucinations. Institutionalized 19 years.

PF, hebephrenic, 39 years old. Untidy; restless or head-knee position, echolalia, handles genitalia constantly, stereotypy, gesticulates, laughs spontaneously; mumbled verberation; inaccessible⁴ for examination of intelligence and sensoria; hallucinations. Institutionalized 3 years.

³ In this paper "paranoid" always means paranoid schizophrenia.

⁴ By "inaccessible" is meant srch preoccupation with fantasy that the patient paid no attention to what the writer said, and/or speech on the patient's part which could not be understood by the writer. e.g., word salad, mumbling, etc.

MD, hebephrenic, 31 years old. Unkempt; incontinent, retains saliva; sits with hands on thighs and head bowed, grimaces, spontaneous laughter; mumbled scattering; intelligence above average; sensoria poor; auditory hallucinations, somatic delusions. Institutionalized 7 years.

Added April 3.

GL, paranoid, 32 years old. Unkempt; gestures, grimaces, spontaneous laughter, stereotypy, often excited; speech relevant; average intelligence; sensoria intact; irritable and guarded; visual and auditory hallucinations; delusions of persecution and grandeur. Institutionalized 10 years.

CL, hebephrenic, 33 years old. Clean; grimaces; quiet and placid; verbigeration and word salad, neologisms; inaccessible for examination of intelligence and sensoria. Institutionalized 7 years.

CC, catatonic, 35 years old. Unkempt; gestures, grimaces, spontaneous laughter, slow; retarded, vague, and whispered speech; average intelligence; sensoria intact; usually placid, but sometimes excited; hallucinations. Institutionalized 4 years.

WR, hebephrenic, 24 years old. Unkempt; grimaces, spontaneous laughter, echolalia, waxy flexibility, compulsive behavior; flight of ideas with blocking, clang association, punning, and distractibility; intelligence above average; inaccessible for examination of sensoria; timid. Institutionalized 2 years.

WW, hebephrenic, 45 years old. Unkempt; restless; word salad; inaccessible for examination of intelligence and sensoria; placid. Institutionalized 23 years.

At first only less deteriorated patients were used, because the writer had accepted the current idea that deteriorated schizophrenics had no social responses. However, when half through with the investigation, he began to feel that this was untrue, and therefore on May 7 the following men were included who were considered by the hospital staff to be the most deteriorated schizophrenics in the institution.

FBo, catatonic, 19 years old. Slow, mute, spontaneous laughter; negativistic; tube fed; incontinent; inaccessible for examination of intelligence, sensoria, and mental content. Institutionalized 4 years.

IS, paranoid, 40 years old. Untidy; hostile, negativistic, continually masturbates; speech sparse; intelligence above average; sensoria poor; hallucinations; delusions of persecution. Institutionalized 22 years.

FBN, hebephrenic, 34 years old. Unkempt; incontinent, forced feeding; gestures and grimaces, spontaneous laughter, echolalia, negativistic, waxy flexibility, head-knee position or posturing; slow; speech sparse with mumbled verbigeration; intelligence above average; inaccessible for examination of sensoria and mental content. Institutionalized 5 years.

EB, paranoid, 30 years old. Untidy; stereotypy, negativistic, restless; speech sparse; mental defective with thyro-pituitary dysfunction; inaccessible for examination of sensoria and mental content. Institutionalized 7 years.

These patients, as well as others, were also observed separately as a part of a study of personality in schizophrenia. Some of the

data gathered in the latter investigation are included in this paper; the observations on social interaction are almost entirely from these interviews.

Since the writer is an anthropologist, the customary ethnographic techniques were used in the observation of both the group and the individuals. In the group investigation, the applicability of these techniques is obvious. As for the observation of individuals, with each schizophrenic living in a world of his own, the problem was to understand that world. The only difference between ordinary ethnography and this investigation lay in the fact that in the former the ethnographer deals with a group of people participating in a common culture, while in the latter the "culture" is limited to a single individual.

OBSERVATIONS

Social Interaction

Nonsymbolic interaction, of the same type as that found in average individuals, was often observed. One of the most common instances was spatial accommodation to one another.

April 2. LW got up and began walking across the room. Immediately MD, about 10 feet away, who stood with head bowed and retaining saliva, moved back to allow LW to pass; when the latter did so, the former resumed his previous place.

Abnormal types of nonsymbolic interaction also occurred; typically, as echolalia and echopraxia. An example of echolalia will be given at the end of this section; at present only some illustrations of echopraxia are included.

April 30. GL stood up; immediately CL, CC, PF, and WF also arose.

June 3. FBo laughed. CL, PF, CC, IS, FBn, GL, WW, and WF also smiled, though the latter two had their backs toward FBo (of course they could see some of the others).

The fundamental mechanism in schizophrenia seems to be the development of extreme introversion as a result of frustration—preoccupation with fantasy and a consequent loss of interest in the real world.⁵ This has its effect on symbolic interaction. Speech

⁵ In schizophrenia the process seems to be one of placing more value on fantasy than on reality, and not a confusion of the two or actual loss of contact with reality. After some degree of transference had been established, it was noticed that some schizophrenics spontaneously differentiated between fantasy and reality. HD described one of his fantasies and then added, "I dreamt it with my eyes open." AS, a female paranoid, stated that she had copulated with a million men; to the question, "Where?" she replied, "I intercoursed them in my mind." DA, a female hebephrenic, would often make statements of which the following are samples: "I'm pretending you're my husband," and "I'm pretending I'm a movie star."

is no longer primarily used as a method of communication with others, for the schizophrenic loses interest in other people as parts of reality; in most cases speech is merely a phase of the overt behavior concomitant to fantasy, along with other gestures. This produces the private symbolism of the schizophrenic as well as his disordered speech.

The symbolic interaction observed was distinctly abnormal. When considered in terms of the analysis of symbolic interaction given previously, the following phenomena were noticed:

1. Schizophrenics may develop private symbols, *e.g.*, neologisms and bizarre gestures. Symbols stand for classes of experience, and when novel experiences occur, or new classifications of experiences are made, symbols are found to designate them. Thus, for instance, in the last fifty years psychiatry has developed a large technical vocabulary to designate the concepts developed in that field. As a result of introversion, the schizophrenic has novel experiences which he too proceeds to designate by new symbols, but, because of his lack of interest in reality, he differs from the average person in his failure to communicate his definitions of these symbols to others so as to be understood by them; that is, his symbols remain purely private.

HD said, "The ahesses are the styahns of myahm." When asked to spell the neologisms in the sentence, he wrote them as follows: "ahess" (those stars which are particularly under the influence of God), "ctiaahahahihinu" (things which partake of the Holy Spirit), and "miahahahahimu" (the female aspect of God, for God has two parts, "myahm" [female] and "pap" [male]—obviously a modification of "mom" and "pop"). He has also developed his own alphabet, which he calls "printed talon."

Gestures may also be developed as private symbols according to the same processes.

The following are a few of the gestures used by HD: Head to the right, and tilted upward; eyes closed; right fist rubbed against neck—"God the Father." Makes a fist with left hand, and touches middle knuckle with right index finger—"God the Son." Holds left arm up, and touches elbow with right little finger—"God the Holy Ghost."

2. Schizophrenics may develop their own referents for conventional symbols, *e.g.*, private meanings. Inasmuch as symbols stand for classes of experiences, as experiences differ, a symbol may come to have varying referents; for example, "displacement" has different meanings in shipbuilding and psychiatry. So, too, the fantasy

experiences of the schizophrenic modify the meanings of symbols. However, the average individual uses symbols primarily for purposes of communication, and therefore, in order to convey meanings effectively, the conventional relation between symbol and referent must be retained in order to be understood by others. But, since the schizophrenic is not as interested in reality, he is not as subject to the social controls which regulate the use of symbolic systems and so develops private meanings for symbols.

VD, a female paranoid, said, "I am the compass master." [The "compass" is that which "directs," and by analogy, the thoughts of a person are his "compass" since they direct his actions. But VD is the "master" of the universe (she only responds when called "Master") and therefore directs the thoughts of all people. Consequently, she is the "compass master."]

The following is an interesting case of overdetermination through the manipulation of customary meanings as part of a delusional system—a *reductio ad absurdum* of conventional meanings, as it were.

I: What is your name?

MH (an elderly female paranoid): My name is Stress H—. Maud H— is my girl name; Stress H— is my woman name. They say, "Miss H—" or "Maud H—" to me; why do they insult me so, a married woman with four children [delusional]?

I: What does your husband call you?

MH: My husband always calls me "Miss Stress" [mistress], which shows that I'm married and a woman, not a girl.

I: Why aren't you called Mrs.?

MH: Mecauses Mrs. [misses] is only more than one miss [*i.e.*, plural of "miss"] and I'm not a girl—I'm a woman.

I: Are there any ways I can tell you're a mistress rather than a miss?

MH: Sure, just look at my hair [an old-fashioned coiffure—the hair worn long with a bun on top]. That's a woman's hair. A girl's hair is different—the bun is in back [*i.e.*, at the nape of the neck]. But when she gets married she puts it up. That tells everybody she's a woman. Anyone can see from my hair that I'm a woman, so why do they insult me by calling me "Miss H—" or "Maud H—"?

Private meanings may be produced through displacement as well as through introversion in cases where the superego is still sufficiently effective to prevent the manifest content of fantasy to appear. The following are excerpts from different interviews with NS, a female hebephrenic.

When I was a little girl, my father gave me two oranges to eat. (Where did you put them?) In my belly, here [pointing to her abdomen].

I put the oranges in my mouth. (Where is your mouth?) [She pointed to her vulva.]

Last night I ate my father's banana. (Was there anything else with it?) Yes. (What?) Two oranges.

I only eat bananas with honey.

I like to feel the banana on my lips. (Where are your lips?) [She pointed to her labia.]

I got my mustache shaved for five dollars. [This statement took some time to interpret. The gist of it is as follows: she paid a midwife \$5 for an abortion, and preliminary to inducing the abortion the latter shaved her pubic hair.]

3. Schizophrenics may develop their own responses to situations. Normal individuals respond to a situation in a culturally defined way because they have learned the conventional meanings of these situations. Again, as a result of introversion, the schizophrenic develops his own interpretation of situations, and therefore his responses are not according to the social norms. For example, a friendly pat on the shoulder is often interpreted as an aggressive action by a paranoid, and is responded to with hostility.⁶

So far the symbolism of schizophrenics has been considered; now let us analyze their disordered speech. There is a conventional way of ordering the elements of every symbolic system, *e.g.*, the syntax of a language. But as a result of the use of gestures and speech as overt manifestations of fantasy, rather than for purposes of communication, schizophrenics do not use the customary ordering of symbolic systems, and so their speech seems disordered.

One type of such speech is the flight of ideas, in which the individual does not control and order his thoughts so as to communicate

⁶ Also, in every instance examined by the writer, he found that disharmony of affect could be explained on the basis of the following factors, either singly or in combination: (a) As a result of the above-mentioned private interpretation of situations, a non-customary affective response is produced. (b) There may be preoccupation with fantasy to such an extent that little or no attention is paid to reality, and the affect displayed is dependent upon fantasy rather than existing situations in the patient's surroundings.

During an interview with GL he became preoccupied.

I: I came to tell you that your sister died this morning.

GL laughed.

I: What's funny about it?

GL: I was thinking how the guys on the ward envy me my money. But I fooled them—it's all in the bank. No one can get it from me.

I: What about your sister?

GL: What about her?

I: She's dead. I just told you so.

GL: When did you tell me?

(c) Though the writer cannot prove it, he suspects that a condition of general repression is another reason for a lack of adequate affect in certain situations

them to others but merely vocalizes his associations, with all their private meanings.

WR: [His parents were divorced. He remained in the custody of his mother until the age of 17, when he went to live with his father in another town. There he met Loretta P—, who became his mistress. However, his father met the girl, married her, and sent WR back to his mother; this was the precipitating factor in his illness.]

. . . the A. B. Dick Company . . . [The first time he used this term he pointed to his penis.]

I am king of the country. (Does the country belong to women?) Yes. (Where is the country on a woman?) [He pointed to his genitalia.]

The old man has an A. B. Dick. His company is bigger than mine. . . . He puts his Missouri Pacific train into the wards. (Is the Missouri Pacific the same as the A. B. Dick?) Yes. . . . He wants me to get off his view and stop irrigating his country. . . . (Is Loretta a ward?) Yes. . . . I'd like his country. I want to cross the Rocky Mountains and get into the country. I used to go to Japan. . . . The old man inaugurated a country. It was the first ground ever gotten in the queen. . . . So he has a ward. Every time he plays his ward, he has a ward. . . . He's taking a country there—all except a little plot of ground he sold William Meredith R—. Here he's speaking now, knowing all the time that he has a ward for the little boy to use his Missouri Pacific. It's a sweet country. In his ward. . . . It's one of his A. B. Dick cells while he's using it. Why does the A. B. Dick award itself a ward to an old man? (What about the old man and Loretta?) He tried to squeeze the little boy out of a position. I kept thinking of my country, but he thought he was smart. He was living with his ward. His Missouri Pacific and Loretta. That was my own train. Every time he gets on it, he calls me, "William Meredith R—, son-of-a-bitch." When he gets off he's satisfied. . . . Here's his ward—every time he wants it he gets it. I've got an A. B. Dick of my own that gets tired. Night turns to morning while he's doing that—that's because he has a country. . . . I get an A. B. Dick ward when he gets off of it. It's the weight of the ward or of yourself. He says it hurts him, but I say, "Your watermelon ought to hurt the same time." . . . He's trying to take my own country across. He must like to do that. . . . It's often that he uses a hose to do that. And when he gets off the ward he takes the hose with him. It's the weight of circulation. . . . And whatever my sausage delivered into his country store. But there was one person there I didn't believe it in. I believe that one person in there has the right to use that train, and engine, and coach—any east and west country trying to get an education should know the north and south ward try to roll trains into wet Mississippi River in the state of Florida. And I thought he must have a lady. And he must know something about it. And everything my father did in the country, and though he liked me, he liked it very much. I thought, he was awarding himself. He must know how to make medicine the Missouri Pacific award a ward—when they get it, it's pretty valuable to them—the first president's country. That's Japan seaport. [Toward the end of the interview he began to masturbate.]

I want my Missouri Pacific in Geraldine R—'s [his mother] country. (Then why don't you put it there?) My father has a bigger sausage than me.⁷

⁷ The dots represent omitted material. Since the patient spoke very rapidly during this interview, and the writer does not know shorthand, he could only record verbatim the material which seemed most relevant to the interpretation of the symbolism.

Another phenomenon is insufficient delimitation of the referent, produced through the lack of sufficient nouns, limiting words, phrases, etc., adequately to make plain the meaning. Because of his lack of interest in communication, the schizophrenic often does not make clear what he is talking about.

CL: He got cold. (Where?) On the street corner (Why?) He stood there for a long time. (Why?) Because it was winter, and he didn't have heavy underwear on. (Who?) Francis. (What happened?) He came in the house and said, "Boy, I'm cold!"

Scattering is characteristic of schizophrenia. This is actually intermittent and disconnected vocalization; the individual has an association of ideas but verbalizes only fragments.

NS: . . . but he couldn't do it. [About two seconds later:] It's a donkey. [The writer then found that her associations were as follows: ". . . but he couldn't do it. Butt—that's what you sit on—the arse (ass). But that isn't nice. *It's a donkey.*" The italicized words are those verbalized.]

GL was silent for some time, when he suddenly said, "And cinnamon and spices." After questioning him, it turned out that he had been fantasizing about the coffee business. He owned a large coffee-roasting establishment and made a million dollars a year. Then he began thinking of expanding his business, and also dealing in tea and spices; it was at this point that he had spoken.

Word salads seem to be produced in two ways. In the first place, it may be an extreme case of intermittent vocalization.

WW writes as well as talks a word salad. However, by asking him to "think out loud" while writing, it was possible to understand the mechanism involved. For example, the first time this technique was used he rapidly wrote, "Store cheap 50 cascarts pink white tan right." While writing he "thought out loud" as follows: "There was a drug store. They made cascarts *cheap*, for 50 cents. The *cascarts*—they made them *pink*, *white*, and *tan*. That's *right*." The italicized words are those he wrote.

Secondly, a word salad may result from an attempt at diversion of attention from painful thoughts. The schizophrenic produces a word salad to keep his mind off a complex, to use Jung's term.* Direct questioning about a complex would produce a word salad in WW, WR, CL, and MD.

JS, a male, after a psychotic episode with hallucinations and introversion, said, "I was very upset emotionally immediately after I saw things and heard voices.

*Since this paper was submitted for publication the writer had observed the same phenomenon in a normal person under stress as a mechanism of repression; and he has read Tolstoy's description of a similar condition in Vronsky after the illness of Anna Karenina.

Then I found I couldn't think straight. All that ran through my mind were a jumble of words; my thoughts were all mixed up, and I thought of puns, different words with similar sounds [clang associations], and the objects around me [distractibility].

NS [interrupting herself in the midst of a word salad]: You see, I talk crazy. My talk is foolish, but not my thinking. I ain't crazy. I ain't crazy, am I? (Then why do you talk crazy?) I feel easier.

I got my right senses, but I ain't got my right senses. (Why?) I was born sensitive.

I talk out of my head. (Why?) It's too many troubles in the world.

In the speech of an average individual, associations are controlled in order to be intelligible to others, but this is not necessary when there is a lack of interest in communication. This seems to explain flight of ideas, scattering, and word salads. However, no matter how deteriorated the patient was, the writer observed that when communication was necessary for adjustment, or the individual was interested, his speech would be intelligible.

WW always produced a word salad. But when I asked at the beginning of an interview one day, "Where is the notebook I gave you?", he replied, "I put it in the desk drawer; it's there someplace." This was the first time he spoke intelligibly to me.

MD was visited by his father. I went into the visiting room, where he was eating fruit and some candy that had been brought him. When he saw me he smiled and said, "Won't you have some candy? I wish you'd take some." Later his father told me that this was the first time in four or five years that he had heard his son speak intelligibly.

These data would seem to contradict interpretations of schizophrenia as basically a disorder of association.

Because of the essentially noncommunicative function of speech in schizophrenia, diction tends to be poor, for in most situations there are no social controls operating to produce speech understandable to others.

PF mumbled a few phrases, sometimes whispering and sometimes yelling, the only word that could be understood was "Wilson."

Poor diction may also result from regression; the individual's diction then corresponds to the stage of regression.

DA, a female hebephrenic, talks with a baby-like lisp and slurring, and in a high-pitched voice. She also blows bubbles with her lips, laughs in a childish manner, and motor coordination is infant-like. The following is a typical statement made to the writer: "I used to be grown up, but now I'm a little baby. Can you carry me in your arms and rock me to sleep? I'm not grown up."

As a result of the private character of symbolism among schizophrenics, in a conversation the individuals are continually in different universes of discourse. Even when they use the same words, the meanings of these words depend upon their own systems. In a conversation, therefore, they go off on a series of tangents, as it were, only touching on the basis of certain symbols they use in common; the referents are often different.

March 26. HD: . . . that store where they sold all them good things; remember?

CM: Yeah, I remember.

I (to HD): What store do you mean?

HD: Why, the store where we used to go when I was in the orphan home as a kid. We snatched candy there.

I (to CM): What store do you mean?

CM: On Saturday nights, when I was on the farm, I'd go to town with my wife, and we'd buy all sorts of things. It was a swell store.

April 9. WW: You had to manufacture different from the other fellow. If he used a chicken, you had to use a duck.

CL: It was a good business. Sand, grass, and oil.

WW: It was what kind of oil? Standard Oil, Goodrich Rubber. That would have been oil if he took that.

CL: He had a lot of cloth machines. And he went up to New York.

WW: And he was the watchman. Whatever he manufactured with. A chicken or duck or liver sausage.

CL: Two kinds of paper they gave you. Writ the paper, and paper up here [pointing to his chest].

WW: It would have been oil.

CL: Oil and receivers and gasoline. He gave him the first oil. They used flour meal and cracker crumbs and sawdust.

WW: With liver sausage and banana oil, with turkey with flour meal and cracker crumbs.

CL: They'd get the girls together and they'd fix breakfast, dinner, and supper for them. Paper oil, or wax and onions?

WW: Standard Oil and Goodrich. That's all—that's all oil and rubber. That's what the business is.

An attempt was made to discover the attitudes the less deteriorated patients had toward each other as a result of obvious difference in their symbolic systems. In some cases, the listener assumes that the other has knowledge of which he himself is ignorant.

April 2. HD and CM were sitting at the same table, when HD began making bizarre gestures.

I (to CM): What do you think he's doing?

CM: I couldn't imagine. I've often wondered about his thoughts while he was doing that.

HD then explained the meaning of a few of his gestures, all of religious significance.

CM: Uhuh. Absolutely.

I (to CM): What do you think about it?

CM: I think it's something different—a sort of a habit. (To HD) Where was you—were you in different company than here when you first saw it? Is it a prayer language?

HD: I first saw it at the orphan home. Deaf and dumb guys.

CM: Oh, it's a deaf and dumb prayer language.

They then began to discuss deaf and dumb people.

April 8. CM and HD were conversing, when HD used the neologism "ahess."

I (to CM): What is an ahess?

CM: I don't know. Henry's awful smart and uses lots of words I don't know.

May 14. CL: Ischy mishy pishy tishy; ooly, hooly, gooly, sooly.

I (to CM and HD): What's he saying?

CM: I don't know.

HD: It's pure unadulterated Jewish.

[Neither CL nor HD is a Jew.]

Sometimes the men would merely confuse each other.

May 5. HD and CM were playing casino, and HD kept score in Roman numerals.

CM: What are you doing?

HD: I'm keeping score in Roman. [Then he wrote "15" as "XI."]

CM: Shouldn't it be "XV"?

HD: Yes, in Roman, but this is Jewish. "XI" is fifteen in Jewish.

CM: Keep it in Roman. I don't know nothing about Jewish.

HD: OK. [He then changed it to "XV."]

May 14. HD, CM, and CL were playing cards. HD dealt counterclockwise.

CM: You're mixing me up. I never played that way before.

HD: This is the way to deal. [He continued to deal in his own way.]

In other instances, one patient may think that the other is queer.

April 9. WW was talking aloud in a word salad, and I noticed that GL often glanced at him.

I (to GL): What do you think of what he's saying?

GL: I don't understand. He don't make sense.

I: How is that possible?

GL: He's insane, that's all.

I: How can you tell?

GL: He's in this place. He's insane, that's all.

I: Is everybody here insane?

GL: That's what the doctors say.

I: What do you think?

GL: Not all are crazy. Some are crazier than others. Not all are as crazy as he is [pointing to WW].

April 18. WW was talking aloud about ramming sticks, street car transfers, and paper napkins down his throat.

CM (to HD): "Ram a paper napkin down his throat!" [He began to laugh.]

I (to CM): What's so funny?

CM: "Ram a paper napkin down his throat!" That's the strangest subject I heard about for a long time.

Beside private symbolism, the general process of loss of interest in reality as a result of introversion also has an effect on social interaction.

Usually, a schizophrenic does not talk *to* anyone, but rather vocalizes while fantasizing; when he does direct his gaze at another person, he really seems to be talking *at* that individual, for he only looks at the other person in passing, while perhaps steadily engaged in a stream of talk. Meanwhile, the other individual is usually preoccupied with his own fantasies, and ignores him—or at least no overt response can be observed.

Conversation, mutual symbolic communication, is also different. In most cases simultaneous conversation was observed; that is, both individuals simply talked at one another at the same time. Obviously, there is little possibility for effective communication under these conditions. Alternate conversation was usually of two types: either with the speakers in different universes of discourse, as mentioned before, or simply echolalic.

April 25. WW: It wouldn't take us two weeks to whitewash that job.

WR: It wouldn't take two weeks.

WW: Two weeks; that's right.

WR: To whitewash that job; that's right.

WW: To what do you work?

WR: That's right; to work.

WW: We could whitewash that room in two weeks.

WR: We could whitewash that room in two weeks.

WW: That's the way the job ought to work out, ain't it?

WR: That's right. That's the work. We'd be through with it then.

WW: We'd be through with it then.

Social Relations

The most striking observation was that the schizophrenics studied showed none of what David Hume and Adam Smith termed "sympathy," *i.e.*, the imaginative assumption of another individual's point of view. Sympathy depends upon the realization of the meanings of overt behavior, and in the average human being rather subtle interpretations are possible. However, the schizophrenic develops such an aberrant symbolic system that his interpretation of the behavior of others may have little or no relation to the actual meanings involved; *e.g.*, the response of a paranoid to friendly gestures has already been cited. Consequently, it is difficult for him to achieve sympathy.

This is reflected in their social relations. They never showed insight into another's predicaments, even when they seemed to like that individual; they never engaged in any verbal fencing, which depends upon the sensitive interpretation of the subtle responses of another.

An additional factor also seems to operate in producing a lack of sympathy. One gets the impression that to the schizophrenic other individuals are merely foils for his own interests; he is so egocentric through preoccupation with his own fantasy that he does not imaginatively divest himself of his own ego and assume that of another. For example, CM, HD, GL, and TM persistently asked the writer, "Won't you sign me out?" Yet they never played up to him, or flattered him, in order to win his regard, even though a considerable degree of transference was achieved in all of these cases. This would have implied looking at themselves from the point of view of the writer, and then acting in terms of his values in order to impress him favorably—a phenomenon commonly observed in neurotics after transference.

As a result of their lack of interest in reality, relations with others were at a minimum in the schizophrenics observed.

There was little talk; many times a whole two-hour period would go by in complete silence. Even when one would speak to another, in the majority of cases there would be no overt response, presumably because the latter was preoccupied with his own fantasy.

April 14. PF is talking aloud, and every now and then glances in the direction of WF, who does not respond.

I (to WF): What do you think of what he's saying?

WF: He's talking.

I: What do you think of it?

WF: I don't know. I didn't hear what he said.

There were only two instances of gossip in the entire period covered by the investigation. In so far as gossip is a means of disseminating news, this shows their lack of awareness of, or interest in, the happenings around them. Also, gossip is usually one of the strongest social controls that exist in small communities, including institutions, and the absence of gossip in schizophrenics is evidence of the lack of social controls dependent upon the factor of sympathy, inasmuch as gossip is based upon concern for the opinions of others.

March 28. [HD had been absent the day before.] HD entered the room and walked over to where CM was sitting.

HD: Hello.

CM: Where was you yesterday?

HD: We were at the lotto party.

CM: Did you win?

HD: No. The guy sitting by the side of me—no, two seats over—won a few games.

CM (after a pause): I hear that Dr. M—— called the operator and said he wasn't coming back—he's got another job. That's what a man told me this morning. [The information was false.]

[They then spent about 15 minutes discussing Dr. M——; what his given name was, how hard he was on patients, how little the physicians know, etc.]

May 23. [GL is now in J2, the violent ward.]

CM (to GL): Do they pack Lawrence J—— [a patient from CM's ward who had been transferred to J2 two days previously] over there?

GL: Oh yeah. He thinks he's hard or something. He goes around talking tough.

CM: How many attendants do they have over there?

GL: Three. Three of them. Boy, do they put you in packs! So tight it's torture.

CM: Packs is terrible.

[They then discussed wet packs for about 5 minutes.]

GL: J—— was talking about going back to his old ward.

CM: Was he?

GL: Dr. W—— didn't think much about that, at all.

I (to CM): How did you know George L—— was on J2?

CM: I heard you talking to the attendant, once.

A good index of the amount and kind of social relations between the men is the knowledge they had of each other's names.

June 6 (the last day of the investigation).

GL knows the names of all except TM, FBn, PF.

CM knows the names of HD, LW, GL, and EB.

WF knows the names of MD, WR, and CC.

CL, CC, and MD did not know the names of any of the other men.

The rest were inaccessible and could not be questioned.

However, some degree of social response was observed in every patient, even the most deteriorated. The following are examples of this point, particularly of instances of cooperation.

April 15. WW, who was sitting at the other end of the room, with his back toward TM, suddenly turned around and waved his hand at the latter, who also waved. WW then nodded his head. TM nodded in return and said, "Yeah." Then WW resumed his original position.

April 30. As WW entered and went to his usual seat, he took the dominoes from the middle table and put them on a bed. When WF came in and sat down at the middle table, he merely sat with his head bowed; he did not touch any of the other games because he always played dominoes. Five minutes later he got up and walked toward the bed where the dominoes lay. Meanwhile, MD was

standing by the bed with his head bowed, but, as WF approached, MD handed him the box of dominoes, though neither had spoken a word.

May 2. CC was called out of the room to see a visitor. In about 5 minutes he returned, with a newspaper in his hand. He sat down, and without a word handed the paper to CL, who was sitting next to him. CL looked at the newspaper. WW looked at the back of the paper held up by CL, which was the sports page, and said, "The Cardinals downed the Giants." GL got up from his seat at the next table and also looked at the back of the paper. Then, when CL was finished and began folding the newspaper, GL held out his hand, and CL gave the paper to him. GL then began to read it. When he was through, he laid the paper on the bed nearest him; a few minutes later he picked it up again and put it in his pocket.

Negativism is also a social response and is significant in proving the patient's awareness of the behavior of others.

May 8. I walked by FBo, who immediately turned his head away. The following experiment was then tried; I stood about 5 feet away, to the side of FBo. Every time I looked at the others, he continued to stare in front of him; but as soon as I glanced at him, no matter how slightly, he immediately turned his head away. I repeated this five times, with the same result. Then I looked at him continually for 5 minutes, and he kept his head turned away all that time; but as soon as I looked away, he again stared forward. However, when any of the patients looked in his direction, or walked by him, he never turned his head away; this negativism was exhibited only toward attendants, nurses, physicians, etc.

May 9. FBo does not respond negativistically when I walk by or look at him. Beside the two-hour group period yesterday, I also spent an hour with him alone.

May 27. FBo responds to my requests, though he is still mute.

Social Organization

Even though the majority of schizophrenics in the group were in close physical proximity during the observation period, most of the time they were socially isolated. The majority sat or stood by themselves. Four men might sit around the same table for a whole two-hour period, all silent, their heads bowed, and to all appearances with never as much as a glance at each other. Or they might be playing games, each one by himself on the part of the table before him, and superficially seem oblivious of each other. However, upon closer inspection, there could be observed the types of social responses already described.

The rudimentary form of social organization developed by the schizophrenics investigated was curiously analogous to that found by Charlotte Bühler and others in small children.⁸ However, the writer does not mean to imply that the schizophrenic is childlike.

⁸ C. Bühler, "The social behavior of children." In Murchison, C. (Ed.), *A Handbook of Child Psychology*. (2nd ed., rev.) Worcester: Clark Univ. Press, 1933. Pp. 374-416.

It seems rather that the type of social organization of schizophrenics is due to the following factors: In the first place, as a result of introversion a minimum of attention is paid to the surroundings, including other individuals. Secondly, the schizophrenic does not want to be disturbed in his fantasy. In the words of the Duke of Illyria,

I myself am best
When least in company.⁹

I (in an interview with CL): Why don't you play with the others?

CL: You're used to being by yourself, and you can't get used to anybody, I guess.

I: What do you do when you're by yourself?

CL: Sit and figure things out.

I: What about people?

CL: You can never watch people. You never know what people will do, what people will think, what people will talk—it's better to be by yourself. It'd be a good world without people. Then you pick what you want, and then you live good. You want to be happy with the world.

I: Isn't there anyone you like?

CL: Oh sure, you like everybody. But after you've been around them a while, you want to be by yourself.

A third factor is the timidity of the schizophrenic; usually he will not initiate a social relationship, even though he is desirous of it.¹⁰

March 28. LW was sitting toying with the dominoes.

I (to LW): What kind of game are you playing?

LW: It's not fun to play alone.

I: Then why don't you ask one of the others to play?

LW: Maybe they're not the inviting kind.

I: You mean they didn't invite you?

LW: Yes.

I: Why don't you invite them?

LW: (No answer).

HD (sitting at same table, to me): I used to play with my mother-in-law. I liked to play.

However, neither invited the other to play, and they spent the whole period by themselves.

In spite of the fact that the games available were such that the whole group could have played together if they so desired, and the chairs were arranged four to a table, only once, under the circumstances given in the next example, did more than two men ever play together.

⁹ Shakespeare, *Twelfth Night*, I, 4.

¹⁰ Vide C. Beers, *A mind that found itself*. New York: 1932. Pp. 58-60, 70.

May 14. CM, CL, and HD were sitting at the same table. CM seemed asleep.

HD (to CL): How about some rummy?

Without answering, CL shuffled the cards and began dealing. After a while they changed to seven-and-a-half. Soon CM looked up.

HD (to CM): Would you care for a sit-in in seven-and-a-half?

CM: Yeah.

This was the only time that three men played together.

Even those who at first played together later tended to play by themselves, so that after a while only HD and CM regularly played together; all the others who played, played alone. CM and LW played together from March 20 to March 27; MD and WF, from March 24 to April 16; HD and CM, from March 28 until HD escaped.

There were some likes and dislikes. CM and HD, who had been in the same ward together a few years back, were very chummy. Toward the end of the investigation, WW and WR would converse at great length. MD and WF, who were in the same ward, played together for a while.

April 14. I (to WF): What do you think of him [pointing to MD]?

WF: He's pretty nice?

I: What else?

WF: He's got a grand personality.

I (to MD): Do you like him [pointing to WF]?

MD: He's a wonderful partner.

I: Why?

MD: He's got lots of time.

I: Why do you like him?

MD: He just plays dominoes carefully.

I: What sort of fellow is he?

MD: He's just quiet, like me.

GL developed violent dislikes toward CL and FBo.

April 16. CL talked aloud.

GL (to CL): Shut your silly mouth, you God-damned Connie. (To me) Keep that God-damned Connie home upstairs, or I don't want to come down here anymore. He always talks to me.

I: Why are you angry; he's not speaking to you.

GL: The guy's calling me bad names all the time, and I'm tired of it, that's all! I'm tired of it. He's had it in for me for months, for weeks.

[After some questioning, it was found that GL thought that CL was calling him names regarding fellatio, incest, coprophagy, etc. I went to CL for a few minutes to get his reaction, but he was speaking in a word salad and therefore inaccessible. I returned to GL.]

I (to GL): He insists he never calls you names.

GL: Then he's a damned liar. They always hate me, because they can't steal my money away from me. They can't steal it, because my money stays in the bank. Keep him upstairs, because he envies me my money. [GL shouted throughout this incident, but no overt response was observed in any other patient, including CL.]

Subsequently, every time CL would speak aloud, GL would swear at him.

May 8. FBo laughed spontaneously.

GL (to me): You'd better get rid of that silly thing [pointing to FBo]. He's no good down here. He's just a silly thing. (To FBo) You're a no-good cocksucker. You son of a bitch. (To me) He's a no-good son of a bitch. He hates everybody here.

I: Why?

GL: Because he's not of our race.

I: What do you mean?

GL: All the boys here belong to the Scandinavian race. But he's not of our race. [FBo is of Italian descent and Mediterranean in physical type. But PF is Armenoid.] (To FBo) You're a no-good simple bastard and a son of a bitch.

Subsequently, every time FBo would laugh aloud, GL would swear at him. Then, on May 16, when FBo laughed, GL walked up and spit at him, saying, "That for you, you . . . [a long string of insults that lasted about 10 minutes]."

FBo did not make any observable response.

HD (to CM): What a guy!

CM (to HD): God'll twist his big toe tonight for violating the commandment.

Presumably the fact that GL did not strike CL or FBo is to be attributed to the presence of the writer, particularly since during the period of investigation GL was transferred to the violent ward for hitting other patients.

No social hierarchy developed in the group, and no individual seemed to dominate any other, except for the following instances of leadership:

April 3. Five new men came in, and remained standing. At 2:21 CM said to them, "When you get tired of standing, you can take a chair."

April 7. When the men came in, only CM and WF sat down; the others remained standing. At 2:14 LW said in a loud voice, "Sit down. Find seats." He then sat down, as did CL, CC, HD, and GL.

However, patients of all types and degrees of deterioration possessed conceptions of status. Thus, though the men usually ignored each other, they would sometimes spontaneously speak to the writer.

March 20 (first day of investigation). CM, LW, and TM talked to me, but not to each other.

Another interesting case is the status negativism of FBo, already quoted.

In order to seek added verification of this observation, the writer investigated the kinds of people assaulted by schizophrenics in the hospital. Though no statistics were available, Dr. F. M. Grogan, the superintendent, and Dr. L. H. Kohler, the medical director, agreed that in their experience at the hospital schizophrenics most often assaulted other patients, seldom fought with attendants, and rarely struck physicians. This would tend to confirm the statement that schizophrenics are aware of differences in status.

A factor which tends to disrupt social organization among schizophrenics is the conceptions of their social roles which they produce through introversion. The average individual's conception of his self and his role in society tends to approximate the conception of others toward him. A social hierarchy and organization are therefore developed as a result of the social differentiation and position in the social strata assigned to each individual. However, the psychotic's conception of his role differs from that of others toward him. To society, GL was an unskilled worker in a shoe factory, but to himself he was a millionaire and a captain of industry; to others, HD was a clerk, but in his own estimation he stood in a special relationship to God. When individuals do not accept the roles given them by their group, no social organization is possible, because they disrupt the customary social differentiation and hierarchy.

Customs

The men almost invariably played games which they had learned previous to their illness. Only the two least introverted men, HD and CM, were attracted by the (to them) new game of Chinese checkers, learned it, and played it. But after four days they lost interest and reverted to checkers and cards.

The greater the degree of introversion of the men, the more modified their games seemed to be, concomitantly with their general deterioration.

April 28. LW is playing checkers by himself. He plays in the usual manner except that he uses the red rather than the black squares.

I: Why do you play checkers on the red squares?

LW: When one plays alone, one plays on the red squares.

March 24. MD and WF are playing dominoes. They divide them unequally and usually do not leave any for the pool. They only play that end of a line of dominoes nearest them; for example, if there is a 6 open on the end away from

them, and a 2 on their own side, though they may have a 6 and not a 2, they either start all over again, or, if they did leave a pool, they continually pick until they find a 2. Both play at random, and not alternately; sometimes one plays three or four pieces successively while the other is playing one. Sometimes WF stops in the middle of the game and starts over again, using the pieces that he has already played without turning them face downward and mixing them. Meanwhile, MD may continue his end of the existing game. Usually they match correctly, but WF sometimes does not; *e.g.*, he will match a 2 with a 4; MD does not seem to notice this. In the middle of a game one will stop playing and stare into space, while the other continues playing by himself. And at no time do they say anything to one another.

May 27. CC is playing checkers by himself. He uses half the board, with the red checkers on black squares, and vice versa. He starts at one end of the board and moves pieces diagonally, one square at a time, until he gets to the other end.

May 2. WW is playing what he calls "euchre." It consists of putting the cards in ten stacks, some face up, others face down. After counting the cards in each pile, he puts them in the box, and then starts all over.

Individuals must conform to a customary symbolism in order to participate in common activities, and, because of the absence of this condition, cooperative games tended to be disorganized.

April 7. GL (to WW): Hey, do you play checkers?

WW: Yes.

GL: Come here and play checkers.

WW went to the seat opposite that of GL, sat down, and built a pyramid of checkers on the board.

GL: Put your checkers on the squares.

WW answered in a word salad.

After about a half minute GL picked up the checkers and put them back into the box.

I (to GL): Why don't you play with him?

GL: He don't seem to know how to play checkers. He just put them in a pile and quit.

GL then opened the box of dominoes, gave WW and himself each 8 dominoes. GL arranged his for playing, but WW made a pattern of his, face down. Then GL put them up for him. WW turned one domino around, face out; GL turned it back. Then GL played the double-6, and continued by himself, taking up his own and WW's dominoes without seeing the numbers on those belonging to the latter, and without necessarily matching any of them.

April 16. CC and CL are playing rummy. After CC had dealt a game, he put the cards before CL, who merely cut the cards, though it was his turn to deal. CC then shuffled, and once more placed them in front of CL, who again cut. This was repeated a third time, after which CC let the cards lie. After about a minute and a half CC again picked up the cards and dealt.

Every time CC has a pair, he lays them down; but CL only lays cards down when he has 3 or 4 of a kind, or a straight.

I (to CL): He seems to be playing differently.

CL: He plays twos.

I: Is that right?

CL: Yeah, that's OK, too.

CC lay down a 3 of hearts and a 4 of spades.

CL (to CC): You've got the wrong 3; you need the spades.

CC then picked up the cards and made another play.

As a result of their tendency to play alone, the men developed individual versions of all the games. Not only would they play solitaire with the cards, but they also played checkers, dominoes, and Chinese checkers alone, with modifications depending upon their degree of deterioration; examples have been given previously.

No real customs were produced by the group as a whole. For the first few weeks, when the men entered the room, there would be a period of indecision during which they would wander about and toy with the various games; but by April 24, that is, after six weeks, the men would come in, and each would tend to sit in his usual chair, or stand in his usual spot, and, if he played, play his usual game. However, this seemed to be a result of the development of individual habits rather than of group custom, for if one man modified his behavior so as to interfere with that of another the latter alone became confused. The following is a typical example.

April 17. GL entered the room and sat down in the chair usually occupied by MD. When MD came in a moment later, he hesitated, and then stood at the side of GL for the whole two-hour period, though two other chairs at the same table were vacant.

[He repeated this April 18, and then from April 21 to the end of the investigation he always stood near the wall.]

At first, when 4:00 o'clock came, the writer opened the door and said, "It's time to go." But on April 16, as soon as the door was opened, and before the writer said anything, the men got up and left, CM, GL, and HD first. This continued until four new men were included in the group. On May 7, the first day of their presence, all left except the four. But the next day the men acted in a confused manner, and only GL and CM left spontaneously, a condition which persisted until the end of the investigation. This was an interesting illustration of the subtle social interaction which occurs even among schizophrenics.

One episode occurred which was an example of the spread of custom. On March 28 LW toyed with the dominoes, arranging them in different patterns and using them as building blocks; he continued doing this for the rest of his stay. April 23, CL, who

sat at the same table, also used some of the dominoes as blocks, but built different types of structures. CC, also at the same table, on May 13 imitated LW and CL. GL, at another table, followed suit May 19, developing his own style of structure. On May 29, WF began imitating GL, who sat at the same table, and also devised another method of construction. Finally, CM, at the third table, began using dominoes as blocks in his own way, on June 4.

Somewhat intermediate between echolalia and echopraxia and the spread of custom is the phenomenon which might be termed "contagion" and is best described by an example:

April 30. The men were quiet until 3:42, when CC began to talk loudly. In a few seconds GL, CL, PF, WW, and WF also began to speak in loud tones. At 3:51 they all became silent again.

Contagion has been noticed on wards, both of noise and violence, but in all cases that have come to the writer's attention such excitement is individual; he knows of no instance in which disturbed schizophrenics have cooperated in their violence.

Thus, few customs developed in the group for two reasons. In the first place, because of different symbolic systems, the men did not respond similarly to the same situation; indeed, from a pragmatic point of view, a psychotic is one who does not conform to the customs of his group. Secondly, because of their extreme introversion, schizophrenics are not interested in common activities, a necessary precondition for the production of customs.

CONCLUSIONS

The following conclusions seem warranted by the observations:

1. Symbolic interaction in schizophrenia differs from that of average individuals in the private character of the symbolism which is a result of introversion.
2. As a result of this private symbolism, communication in schizophrenia tends to be ineffective.
3. The social relations, and therefore the social organization of schizophrenics, are rudimentary.
4. Because of the pathological type of symbolic interaction which exists, customs and cooperative activities are at a minimum in a schizophrenic group.

Therefore, it may be concluded that normal symbolic interaction is basic in the development of society and culture.

IDEOLOGIES IN PSYCHOLOGICAL WARFARE

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MANY people, when commenting on the present world conflict, mention—as a surprising fact—the apparent strength of ideologies as a motive for aggression and as a powerful weapon in warfare. It seems, at first glance, when one looks for the motives of the present war that this is a war of and for ideologies: Nazism and Fascism versus Communism, or Nazism versus Democracy, or Totalitarianism versus Freedom, and so forth. In editorials and in other popular discussions, one very often finds the argument that this country will enjoy the blessings of peace only so long as we are successful in keeping out all European “isms,” *i.e.*, ideologies.

All such discussions and contributions to the search for the causes of human conflict disregard the idea, it seems, that ideologies are much more the *symptoms* rather than the causes of conflicts. A merely psychological analysis of the problem of “ideologies” is dangerous. Psychology cannot replace history, economics, or sociology; it can only supplement these social sciences. With this in mind, it might be wiser not to attempt to give a comprehensive psychological theory of “ideology” but to make use of psychological observation and knowledge in order to throw some light on the problem. Our first consideration is: “*What is the psychological significance of an ideology?*”

An ideology is for the most part a rather strange mixture of scientific and everyday statements (some of them true, some of them false), of philosophical generalizations and principles, of orders, moral principles, expressions of decisions, and faith. Many people overlook the fact that ideologies cannot be regarded as scientific theories (false or otherwise). The latter are of a different logical nature, so to speak. It is possible to prove or to refute a scientific theory. Scientists admit mistakes, change, and often adapt their theories. They agree on common ways of checking. True scientific research permits the giving-up of a theory. It is

doubtful whether the "pet theory" habit of some scientists contributes very much to the progress of science.¹

This, however, is different in so far as ideologies are concerned. Only a certain part of ideological sentences have the character of scientific statements, or of everyday contentions. An ideology may be compared to a large net whose parts are made of different kinds of mesh and must be carefully analyzed to gain some insight into the nature of the weave. Some of the parts do not differ from scientific statements which require proof based on evidence. But most of the other statements have only the grammatical form in common with the type of sentence which might be called the rational or empirical type of contention. It is in this sphere that it is possible to have a profitable discussion with a person who "defends" his ideology or tries to "convince" us that his ideology is sound and that we ought to accept it. In this area, one may either agree or disagree, since both acknowledge the same rules of getting information, of checking, and so forth. Adversaries are willing, as long as they feel that the other areas are untouched, to admit, to concede, to see the other fellow's point of view. This possibility for the exchange of opinion sometimes goes even farther into some of the other regions of the ideology structure. But agreement then does not mean agreement on provable statements; it only means the sharing of wishes, dislikes, hopes, and fears. The ideology (in German the word *Weltanschauung* is used) does not consist only in the simple-sentence-type of statements such as we find in scientific theory. Most of the sentences are of a grammatically different nature. Ideologies express moods, hopes, expectations, likes, and dislikes in the form of principles. An effort is made to explain and to support these principles through the scientific-sentence-type. The nucleus of the weave-structure of an ideology consists in certain tenets which cannot be checked, refuted, or proved, but only "believed" like a religious creed.

Ideologies are best compared to religious theories. A certain portion of religious theories can be checked and proved, even refuted. It is possible to discuss, for example, the historical truth of certain contentions of the Bible, whereas the discussion, even inner doubt, of certain other parts is not admissible. This varies,

¹ At this point the concession might be made that it is possible from a philosophical point of view to make theories "irrefutable" by additional hypotheses. In practice, however, we do not keep scientific theories or formulas which have become impractical and which can be replaced by clearer, shorter, more exact ones.

of course, in different religious groups. We call the religious statements that may not and cannot be doubted, checked, or proved, *dogmas*. The person who believes in a dogma cannot admit to others or to himself that the dogma is or might be wrong.²

Not every part of an ideology—as we have pointed out—is of the nature of a religious dogma. Those borderline areas of the ideology-weave-structure which can be discussed in the same manner as scientific or everyday statements are of no psychological importance. We might dismiss them as belonging to the normal state of mind, some of them true and some of them false. We are interested, however, in the dogmatic part of the ideology: the nucleus, the “irrefutable” principles, beliefs, fundamentals, or whatever one may choose to call them.

What is the psychological nature of a dogma? A dogma (the nucleus of every ideology) may be considered as a symptom, as an expression of the fantasies, conscious and unconscious wishes, aggressions, and attitudes of a group. One cannot refute an individual’s wishes or fantasies. One cannot refute an individual’s aggressive tendencies as one can refute his statements. A dogma or an ideology has to be treated differently if one wishes to weaken its influence or its power. We cannot refute the dog-ideology of a neurotic patient who suffers from a dog-phobia by “proving” that only a negligible number of dogs are dangerous to man. We must treat the cause of the symptom, part of which is the dog-ideology. What is true for the treatment of ideology-symptoms of individuals also holds true of the dogma-ideologies of groups, parties, and nations. All this may be more easily demonstrated by a concrete example. Let us therefore turn to the Nazi ideology.

It is not merely a sign of hostility against the Nazi philosophy when we contend that it seems to be rather difficult to define the nucleus of the Nazi dogma since the Nazis have at different times readjusted their dogmas to different situations just as the neurotic patient “adjusts” and changes his symptoms which, although changed, nevertheless remain the expression of the same disease.

² Examples: We believe in a scientific theory; we believe in a faith or creed. We use the term “believe” in both cases even though the use of the same word-material tempts us to overlook the fact that two different interpretations of the word-material have been given. The person who believes in a certain psychological theory does not generally make a creed of his theory, although he may. The “elevation” of a psychological theory to a creed might result in heightened emotional satisfaction, but would not increase its scientific value. Psychologists, I think, will not mind admitting that at times they have had to take pains to prevent the fading-away of borderlines between believing a scientific theory and believing a dogmatic creed.

The repressed quality returns in different disguises. A neurotic cannot be talked out of his disease although he might be willing to change his symptom-dogma. In the same way Nazis cannot be converted by means of discussions alone even though they may be willing to change their language and some minor parts of their dogma-ideology.

However, just as the neurotic displays over and over again the same attitude toward life, one may expect to find certain parts of the Nazi ideology unchanged.

I shall attempt to indicate these constant *Nazi dogmas*:

1. The *leader-principle* contends that the leader is always right, that he does the thinking and deciding for the people, that it is necessary and important to obey him and to make any sacrifice he demands. This dogma is often expressed: "Führer, befehl; wir folgen Dir!" (Leader, obey; we follow you).

2. The "*others*" *persecute and suppress innocent* Nazi-Germany. ("Others" is a changeable symptom which means at convenience: Communists, Democrats, Liberals, Czechs, Jews, Free-Masons, Capitalists, Socialists, Americans, French, British, Aristocrats, Bourgeois, Catholics, Protestants, etc.) Germany is encircled, is in danger, must defend herself. This belief is often expressed in "Das Verbrechen des Friedensvertrages von Versailles" (the crime of the Versailles Peace Treaty).

3. *Germany is superior*. The Germans are a better race, have better blood. Germans have the best "*Kultur*"; they should be on top of the world. Germany and her leaders shall and will make history. This part of their dogmatic creed reminds one of the German anthem: "Deutschland, Deutschland, ueber alles, ueber alles in der Welt" (Germany, Germany, above all, above all in the world).

4. "*War is the father of all things*." Conflict is unavoidable. War is a blessing, necessary for a strong and great nation. Pacifism is cowardice. The war-spirit creates the great and noble things in life. Nazi youth is taught that "Frieden ist eine Pause zwischen Kriegen" (peace is a pause between wars).

5. *The individual is unimportant*; the country is important: an extension of the leader-dogma. The individual must serve the state and the leader and make sacrifices. "Wir dienen Deutschland" (we serve Germany).

6. *Anti-Semitism*: An extension, or better still, a very important part of Dogma 2. It is all right to persecute the Jews because "Der Jude ist schuld" (the Jew is guilty). This seems to be one of those symptoms which is always operative, although the persecution of Jews in Germany has its plateaus as well as peaks, just as our imaginative patient with a dog-phobia might at times dare to pat a very small Pekinese (which reminds one of "Sie sind ja ein anständiger Jude, aber die Juden im allgemeinen . . .") (you are a decent Jew, but the Jews in general . . .).

It might be debatable as to whether the dogmas indicating the position of the Nazis toward the function of women, sex, religion, education, capitalism (the dogma of the *Zinsknechtschaft* is one of the discarded symptoms) belong to the main structure of the edifice of dogmas. One may think that a deeper understanding of their psychological meaning does not help one to recognize the main structure of the dogma skyscraper any more than the comprehension of the psychological meaning of the cult of St. Anthony promotes an understanding of the edifice of Catholic dogmatism.

What is the psychological meaning of the Nazi dogmas described? First of all, it seems important to point out that the following statements are about the psychological attitudes of groups, and will not allow the drawing of any conclusions about individual Nazis, just as statistics on the death-rate of sixty-year-old persons are of no help in making forecasts about the chances of a particular individual's reaching the age of sixty. Psychological statements about groups indicate what is common to individuals of a group in certain group situations. It might be added, however, that the attitude of an individual in his private affairs might not differ very much from his attitude in these group situations. For example: a Nazi party member might or might not in his private life be as fanatic, intolerant, and emotionally dependent as when marching in a Nazi demonstration or listening to a speech by the leader. The efficacy of dogmas (or neurotic symptoms) reaches different areas according to the case and situation and is of varying degree. Here we are interested in group phenomena for the most part and will neglect the individual Nazi for the present.

The Nazi dogmas are the symptomatic expressions of a certain primitive group attitude, of a regression to an infantile state of mind and emotions. They do not appeal to intellectual judgment but to primitive emotions. The outer defenses of the Nazi ideology

are that part of the mesh work which consists of selected facts (true, false, or distorted as the case may be). Nazis do conceive and criticize correctly certain parts of reality just as the man with a dog-phobia might be perfectly adjusted in many other life situations. It is possible to break these outer defenses, to prove that certain parts are incorrect; but this intellectual approach does not work when we approach the inner defense mechanisms of the Nazi ideology. These inner defense mechanisms of the Nazi ideology reach deeply into the unconscious parts of the personality. They revive and use primitive instincts and emotions, infantile impulses. The Nazi dogmas expressed in the child's language might be formulated as follows:

1. Father is always right. He tells us what to think and what to do. When father tells us something, we must do it even if it hurts us.

2. Some of our brothers and sisters are mean. They try to take everything away from us. They threaten us. We must fight them so that only we may possess the love and protection of father.

3. We are father's best children, more clever and stronger than all the others. We ought to have the best things. The others in the family ought to obey us.

4. There is always danger in the nursery. Our toys are in danger of being taken away by other children. We must watch constantly and be ready for a fight. If we want to get a toy, let us take it by force.

5. Father tells us to think of the family first, not to be selfish, and to make sacrifices. A good child has to support his father and mother.

6. We hate children with red hair. Father says that children with red hair are criminals. Father knows. Our neighbor, though, who has red hair happens to be a good kid, but he is an exception.

The Nazi state of mind is thus a regression to the nursery psychology: Parents are all-powerful, wonderful, and always right. Trust them. They will lead you. If you want to get something, use force. Don't compromise. Don't permit the other child to take anything. Fight for the things you want. It is all right to put the other child out of the way. You are the best child because you are the only real child of the father. The other children are not the real children of the parents. Father and mother offer protection, love, and security; it is all right to obey them.

One part of Nazi ideology is the complete dependence upon father, upon the leader, and upon any kind of authority which represents a father-substitute. The other part is the aggressive reaction against the siblings. Submission and masochism are expressed toward the authorities. Narcissism, presumption, projection, and aggression are directed towards the siblings (minorities and outside groups).

The Nazi ideology as a revival of old latent feelings in every individual has something else in common with the behavior of the neurotic patient. The neurotic patient revives infantile situations, moods, and attitudes in situations of insecurity and anxiety. Nazi ideology as a dogmatic creed becomes powerful in emergency situations. Whenever we have to face a reality that is too difficult to master, we are in danger of wanting to use the same means of defense as the Nazis. We call for great leadership in times of crisis. We suspect foreigners and minorities to be dangerous to the common safety. We do not dare to decide upon important issues, and want others to help decide them for us. We believe in times of danger that we should make sacrifices for our country, and we ask for the suppression of those groups which do not share our attitude. In times of emergency, we believe more in the nursery psychology than in the psychology of the grown-up.

Our literature of the superman (which has only rather far-fetched relations to the *Uebermensch* of Nietzsche) and the Dick Tracy stories read by many children and grown-ups, our prejudices against other creeds and colors are an indication that none of the Nazi dogmas are really foreign to our own emotional life. Differences are only a matter of degree, and, although it seems a platitude to repeat that "the child is father of the man," this helps remind us that every individual and every group can discover in itself the emotional roots which lead to the fascist dogma-ideology.

I think that it is dangerous to try to explain historical and social facts by psychological laws alone. The contention that the Nazi ideology is a symptom of the German character which repeated throughout history the same mental pattern from Friedrich the Great to Bismarck, to Kaiser Wilhelm and finally to Hitler, sounds like a psychological imitation of the Hitler race-theory. According to Nazi ideology, the German people are the "best" because of their blood. According to some adversaries of Nazi ideology, the German people are the "worst" because of their psychology. (This

seems to indicate that in times of emergency we also are in danger of using ideologies to explain the world.) This digression, however, should not exclude the possible explanation that it is easier for historical reasons to arouse the latent infantile feelings of the Germans in times of crisis, emergency, and anxiety.

Do we have an ideology of our own? Do we have dogmas which cannot be discussed because they are a part of our creed not to be touched by reality, by arguments, and by new experiences? Is our ideology as strong as the Nazi ideology? What means of defense do we have? We call our ideology "Democracy." It is the faith that it is possible to organize social life according to the attitude of grown-ups, to rely upon our ability to think, act, cooperate, compromise, recognize limitations, to let the intellect decide, to renounce aggression which may be dangerous to others; in other words, to believe in the principle of reality.

One does not like the idea of calling the attitude of a group of mature grown-ups a dogmatic creed or ideology. One does not like to have Democracy compared to Nazi dogmatism. But if we wish to gain some psychological insight into our own cherished beliefs, if we wish to compare the strength and the weaknesses of our own philosophy with that of the Nazis, we have to submit to an objective analysis of the emotional roots of our own attitude. We have dogmas too. For example: All men are created equal; life, liberty, and the pursuit of happiness; "Give me liberty or give me death!" The intellectual support of these convictions (the "others" call them prejudices) is similar to the intellectual support of the Nazi prejudice-convictions. We are willing to admit certain weaknesses in our system, in our way of life, but we adhere to the basic philosophy: use and develop your ability for thinking; try to get some satisfaction out of life, but without hurting the other fellow; be careful that the father-president doesn't take away your hard-won grown-up independence.

The ideology of Democracy represents an attitude which allows aggression against the father-figure (although to vote a president out of office is a sublimated aggression very different from the Nazi aggression against minorities or outside groups) and asks for consideration toward the other fellow. It is the attitude of the grown-up who tries to face reality and to master it. We believe that this is the right attitude, and we believe as strongly in it at times

as in a creed, although history and present conflicts offer little material to support or to prove our democratic ideology.

The democratic dogma is a safe principle in ordinary times, but in times of emergency it might become dangerous, as, for example, when the opposition forces the government for matters of democratic principle to discuss problems of war openly and to give information that might help the enemies of the system. The democratic dogma might even prove an obstacle to the adjustment required by times of emergency. Every grown-up should want and should be allowed to run his own life, but an emergency operation needs experts and does not allow for democratic discussion with the patient. What safety valves we can use to make sure that the experts do not misuse their power and kill the patient does not seem to be too great a problem in medicine, but it is one in social life, and arouses a great deal of anxiety the cause of which may not always be based on a reality-fear.

If we try to compare the democratic with the Nazi ideology, then we might state the difference in this way: the structure of the Nazi ideology has statements that can be checked and proved only around the border, but the main part of this structure consists of dogmas (sentences that express conscious and unconscious feelings, fears, hopes, likes and dislikes that are the symptoms and the signals for and of an attitude which reminds one of that of a neurotic regressed to an infantile state) which cannot be proved or refuted, or reached by rational means but can be approved or disapproved of only as we approve or disapprove of judgments. The logical difference of the two sentence-types (scientific statement, provable; and emotional expression, approvable) mirrors the psychological difference. They mean something different. (Such a point of view does not allow us to refer to the Nazi philosophy or to the statements of classical metaphysics as senseless.) Their sense lies in the psychological truth they represent.

The ideology of Democracy has mostly sentences of the first type, of the rational or empirical sentence-type: the scientific or everyday-life statement that can be discussed, proved, accepted, or refuted. A small part of the democratic meshwork of ideology is of a dogmatic nature, but the greater part of the democratic conception can be reached by the intellect, and arguments can destroy the outer defenses of the democratic ideology. This is the great weakness in

the ideology of Democracy in comparison to Nazi ideology when both sides attempt to destroy each other in psychological warfare. The intellect does not reach the main parts of the Nazi ideology, but fascist argument can weaken the intellect and arouse old latent infantile attitudes always ready to overpower the defense system of the intellect. To express this in a more technical language: The greater part of the Nazi ideology represents the primitive id and unconscious super-ego forces. Only a small part of it represents ego-strength. The opposite is true of democratic ideology.

A very large part of democratic ideology is ego-representation. A very large part of this democratic ideology is prepared to recognize reality and its limitations, to compromise, to renounce wishes of the id, wishes of power and aggression, to become adjusted to the necessities of group life with more evenly distributed power and means for gratification. Only a relatively small part represents the dogmatic part of the democratic ideology which rests in the unconscious. The democratic ideology is open to intellectual attack, unlike the Nazi ideology. More than this, the democratic ideology, not having many emotional dogma defenses and not based on latent urges for power, possession, and aggression, on infantile fears and hates, is also open to an emotional attack by that which appeals to those latent urges covered but barely by a thin layer of civilization, of ego-strength. To this we might add that a war, mostly through its reality and its possibility for the gratification of infantile urges, strengthens the ideology of Nazism.

Our distaste for the combination of the word *democracy* with the word *ideology* has, by the way, its psychological justification. The democratic ideology, seeming the least dogmatic, the most mature form of adult adjustment to life, has no set of principles, dogmas, and rituals that can be compared in strength to Nazi Reichstag ceremonies, demonstrations, songs ("Heute gehört uns Deutschland, und morgen die ganze Welt," "Die Fahne hoch, die Reihen dicht geschlossen . . .") and so on. Our rituals and our principles (Pledge of Allegiance, Armistice Day, Bill of Rights, Declaration of Independence, etc.) seem to be mere shadows by comparison. The main reason for this is that only a very dogmatic creed can successfully make use of rituals. Healthy persons do not gather strength through washing compulsions but through learning and activity. Our main problem now seems to be: *How can we strengthen the ideology of Democracy and how can we weaken and*

destroy Nazi ideology? This is a problem not only for countries dominated by Nazi forces but also for countries within the realm of power of democratic arms. Ideologies in a total war of this kind do not recognize borderlines between armies. Panzer formations seem to have learned the method of infiltration from psychological warfare.

I think everybody should learn from his enemy! The Nazis employ methods of propaganda, of diplomatic action, which indicate that they know they are trying to change or to weaken the minds of the people who are of different emotional make-up from their own. When talking to us, they accept the language of Democracy, our dogmatic creed, our habits, prejudices, traditions, problems, and rituals. They do not attempt to attack our whole ideology at once. As a matter of fact, they generally agree with us in all parts but one. They isolate one single item, mostly one of current importance, or one that represents one of our weakest spots, and then attack it. They "accept" all our goals, identify themselves with them, do not touch most of our cherished beliefs; but they use their propaganda effort to undermine that one item, just as in real war they take one small country after another and do not attack a united enemy. The following examples may illustrate the point more clearly. We all recall the ill-famed Bund meeting on Washington's birthday. The Nazis then accepted our tradition, our belief in freedom, and even our rituals: the display of the gigantic picture of Washington (recognizable by the connoisseur of Nazi practices as the ritual of displaying large pictures of the leader), of many American flags, the talks about freedom of speech, the acceptance of our national holiday, and the appeal to the wishes for peace as predominant in a democratic nation which has been brought up in the spirit of settling all social issues in a democratic and peaceable way. No suggestion was made to discard the philosophy of Democracy. But all of them united to "prove" that the Churchills, Roosevelts, and "certain circles," of course, are trying to force the people into a dictatorship. The speakers insisted that they believed in all our ideals and dogmas, tried only to discredit our leaders, pretending at the same time that they (the speakers) were more democratic and thought more in terms of our tradition than did all the others. This meeting was merely used to discredit the efforts of our chosen leaders in preparing the nation for the defense of our Democracy. The meaning of it was something like

this: "We want freedom just as all of you do, but your leaders do not. We want peace because we are super-democratic but your leaders and 'certain' circles are not."

You may recall one of Hitler's speeches, his official answer to the demand of Roosevelt to promise that no other country in Europe would be attacked. Hitler tried to convince his American listeners (his speech was carried on all American net works perhaps due to certain feelings of guilt on our part toward the Nazis) that Roosevelt did not know his history. He reminded us that all the great events in American history which are celebrated by American tradition have been achievements of war. Our great American heroes of Democracy, Washington and Lincoln, believed in war and revolution, whereas democratic governments of today are not really democratic. They only talk. Hitler, however, just as his great predecessors, Lincoln and Washington, fights for real freedom, etc. In both cases we see an appeal to American democratic tradition, to American rituals and dogmas. The language is our own language. The purpose of one talk is to accuse us of war-mongering, the other to justify war; but both in spite of their democratic phraseology aim to separate the political leadership from the people, to spread discontent, to isolate certain groups.

A Nazi talk, teaching and preaching openly and directly the theories of the leader-principle, of blood and Pan-Germanism, of the "might is right" philosophy would not have any effect upon the American people because they are prepared to deal with it. Propaganda of the Nazis is not directed against our dogmas, our beliefs, does not use strange Nazi language and Nazi dogmatism, but singles out seemingly unimportant laws, small groups, certain measures of the government, certain leaders of the American governing body. Nazis use our language of Democracy, our dogmatism, our creed, our ideas, our hopes, in order that they may destroy them.

Our own propaganda technique reminds one at times of the effort of the preacher of a religious sect believing in teleological principles who tried to convince a group, all the while using the language, rituals, and ideas of a church sermon, that the scientific point of view is a sin, that the belief in causal laws has to be discarded in favor of teleology. Our preacher might have had more success had he known the language, problems, habits, and prejudices of our group of scientists and could he have talked on some

theoretical consequences of the equations of Heisenberg or on some other modern conceptions of the atomic theory, and "demonstrated" that the theory of causality had to be discarded. Scientists can be aroused to a metaphysical point of view only when we succeed in showing them some of the limitations of their own thinking. They do not react positively when we use a language and weapons of logic which are strange to them. Behaviorists cannot be made to change some of their views by arguments using psychoanalytic terminology, etc.

Another example may be found in education. The teacher who tries to convince the boys who want to play baseball or read the comic strips instead of figuring percentage that they ought to do percentage since it prepares them for life will be unsuccessful. Children have to be understood and dealt with on their own level. A small child learns to get along with a sibling not because of a modern book on ethics but perhaps because of a good fairy tale which reflects his own conflict. Moralizing teachers who use "Sunday school stuff" are not the most effective educators. We have to know the child's language, the child's needs, his specific conflicts, his emotional level, his intelligence, if we want to do a good job. It is also a commonplace that nobody expects to change a child's way of life or ideology at once. We must go slowly. We must attack one problem after another. Bringing up a child is a slow process. We face hostility, different emotional periods, different levels of intelligence, different backgrounds, different social conditions, etc. "Good" education based on dynamic psychology has a great deal to contribute to our problem of dealing with the destruction of Nazi ideology. It helps us to understand that a Nazi ideology represents not only a set of abstract principles but a set of true and false statements, that it is also an expression of different emotional layers, that it has its strong and weak points, etc.

Anti-Nazi propaganda has to use the language of the enemy. It will not be fruitful if all of the Nazi ideology is attacked at the same time. Anti-Nazi propaganda has to make use of emotional means too. We have to attack and single out minor points which are the weakness of the Nazi meshwork. We must at first accept the broad parts of the Nazi-ideology net. We have to accept their dogmas and their rituals. Language about humanity and the dignity of mankind makes as little sense to most of them as "blood, race, and power" talk here. (It is easier to appeal to intolerance,

racial and family pride than to appeal to tolerance and such complicated things as individual dignity.) It is necessary to have different layers of propaganda according to the different emotional and intellectual make-up of different individuals or groups.

Our efforts to destroy Nazi ideology have to be directed against all areas of fascist ideology, against all their dogmas and even their rituals. Some efforts will have to deal with the borderline areas of fascist ideology. The effect of presenting the truth and destroying false or distorted Nazi "information" will be a strengthening of the individual ego. A stronger ego is better prepared to resist the temptations of the wishes of the id as expressed in dogmatic Nazi faith.

More has to be done. The dogmatic creed of the Nazis must be attacked directly and that cannot be done by intellectual means alone. The strength of a dogma has something to do with the security it gives, mostly emotional security. Of course, we might attempt to destroy the leader-principle by arousing fear, distrust, and anger. But we might also make use of it in trying to displace the emotions to another object, for example away from Hitler to a democratic leader. Complete dependence upon a democratic leader is not a very desirable trait, but the sublimated form of a quasi-Nazi attitude. Believing blindly in Thomas Mann, however, is less dangerous than blind faith in Hitler. The wish to be better than others, to suppress others, and to dominate the world may find socially useful outlets in being the leading scientific power, sport power, etc. The hostile feelings against a certain group may be satisfied by adjusting this group to one's own standards and creed. Our efforts will have to attack the dogmas, to weaken and destroy them, but at times it will be helpful to make use of the emotional force behind them and to sublimate them. It is impossible to suggest devices which work in one area only, to attack just one special dogma, let us say. Every clever device will work in different directions. The information that so and so many persons died at the Russian front, giving accurate figures, even names, strengthens the ego because every true fact will help a person get a clearer picture of a situation. But this information also works against the leader-dogma. The leader, it turns out, does not offer security but death. It works against the creed of the dominant position of Germany because reality destroys power-fantasies. It

arouses fear and anger; it destroys group morale, the group super-ego.

This paper is not an attempt to work out a system of propaganda and educational techniques corresponding to all the parts of the Nazi pattern. It tries rather to suggest and to point in a specific direction.

One important factor is that propaganda should not be considered from the moral point of view but from the point of view of effect. The effect of our efforts should be the destroying of the Nazi group formation, the strengthening of the ego of the individual, the building up of the ideology of Democracy. We should encourage the individual and discourage the Nazi group member. The actual device used might not fit into our moral code. This should not matter. We believe that it is wrong to kill and to destroy, but the only means left to the Democracies to defeat the forces of death and destruction seem to be death and destruction. This is a hard task but in our efforts to influence others we must make use of any necessary and available tool just as we cannot avoid using airplanes, tanks, and battleships although we believe in the ethics of Democracy. We have to differentiate between aim and tool. The materials and tools used to create a marble statue need not be in accord with the aesthetic taste of the sculptor. The tools and materials used to build and safeguard a Democracy do not always mirror the ideology of Democracy.

Propaganda in enemy-occupied land is very difficult because of our physical limitations. The Nazis have a much easier task in our free countries. We shall be able to do little in those territories where their power has not diminished although the effect of one good leaflet in a concentration-camp atmosphere is much greater than in an atmosphere where there is comparative freedom of speech and press. We should not forget to wage psychological warfare in countries where we have physical power and thus more opportunity. The Nazis must be fought in their illegal and underground organizations in this and other democratic countries. We have to fight them in some of those groups still allowed but infected; we have to fight them everywhere.

Among the most fertile fields for activity are the schools, colleges, social agencies, factories, the armed forces—any group of people. In this country the situation is comparatively easier. The appeal

should be directed to the intellect of the people, strengthening their ego, arousing their democratic emotions, and sublimating their primitive emotions. New rituals of democracy must be invented and used. In a twentieth-century city with skyscrapers, the elevated, monopolies, unions, football games, movies, radio, airplanes, one cannot use rituals which sufficed in the times of the Puritans. Not the content but the form must be changed. We have to adjust to the twentieth century the teachings of Democracy and education toward Democracy.

We have many allies. One of them, the strongest in America, is organized religion: the Church. It is a commonplace that those who can prevent the breakdown of religion can prevent the victory of the Nazi system. The breakdown of religion can be avoided through more effective, more subtle, more modern means of religious education. Education, religious and practical, should be democratic and teach sound democratic tradition. This does not imply traditional methods however. We must sharpen our tools.

There is a need for schools for propaganda and modern education based not on the teaching of subjects, but on psychology, on imparting the skill of influencing, understanding, and teaching. Democratic propaganda, as a matter of fact, is education, but good education is also propaganda. "Propagare" does not mean to distort facts, to invent lies, to destroy faith and arouse criminal emotions: "propagare" means to spread, to transmit, to disseminate. We disseminate just as the others disseminate, but the difference in *content* is important. To propagate something—the value of a certain tooth paste, of murder, philosophy, or of liberal education—effective means are essential for success. Some of the means might not appeal to our traditions because we would like to repeat our own education, even the form of our own education. We have to learn to use new tools for the old job.

The Nazis gave us a splendid and costly lesson. It is time to take heed of their lesson. The education of individuals and groups is difficult. The same is true for the destruction of ideologies or for their protection. It is difficult because we are working against a clever enemy who, besides his skill, has the easier job.

The destruction of Nazi ideology has to be taught. The writing of radio scripts, leaflets, speeches, letters, newspapers, poems, songs, the work of the secret propaganda agents in occupied countries or in illegal organizations here, the work for our own propaganda all

require skill, experience, and organization. The setting-up of agencies, courses, seminars, study groups, schools, etc., is one of the tasks of psychological warfare. It cannot live on ideas alone but has to rely on *scientific staff work with imagination* just as does the work of the army, navy, and air force. It should not be separated from them but should be a part of their aggressive power. Propaganda is not only a thing to be feared, but it can also be used as an aggressive weapon for the victory of Democracy.

I do not think that psychologists need to believe that their activity and findings are of a very great and decisive importance in order to feel elevated and encouraged, thus deriving more pleasure from their activity and stimulated to do more. On the contrary, I hope, psychologists prefer to know the limitations of their findings in their practical application. We try to free ourselves from feelings of omnipotence and we derive the strength for our activity from our ability to see the limitations and shortcomings of our scientific and practical endeavors in the field of our chosen profession.

Therefore, we shall not object to remembering that wars are not won by the application of psychology. "Psychological warfare" sounds very aggressive and might arouse fear like other "catch" words, but its actual importance is often overestimated. Wars today are not won by propaganda, by leaflets and short wave transmissions, by headlines and the March of Time. Neither are they won by political speeches or fireside chats, just as they are not won by education or morale tests. Wars are won by physical aggression, by the ruthless employment of tanks, airplanes, battleships, submarines, and efficiently trained technicians who know how to use their weapons. We do not need to fear Goebbels, but we fear (with or without German scientific propaganda, in spite of our own propaganda to destroy our fear) G6hring's *Luftwaffe*, Raeder's submarines, Keitel's *Panzertruppen*, and Himmler's *Gestapo*. The best psychological warfare of Democracy is ineffective as long as the "others" have the victories. The best morale—Nazi or democratic morale—can be destroyed by tanks.

This, however, should not prove too great a discouragement to psychologists whose hopes to contribute to the destruction of Nazi tyranny are high, because they have a function in spite of the findings of the Gallup Poll that the greatest change of public opinion after a political speech is not more than 2 per cent. Opinion and morale cannot be changed immediately but need

many steps of preparation. A change can be prepared and facilitated by application of psychological findings. Facts will do the decisive work.

Psychology can help a defeated enemy accept defeat more easily, and change his point of view. After the *Anschluss* of Austria when most of the Austrians still hoped for a miracle or for a fight and were pro-Austrian, but already uncertain, lamed in their attitude and full of fear, huge bombing squadrons of the German Luftwaffe flew uninterruptedly over Vienna, dropping millions of leaflets with a text that ran something like this: "Die Deutsche Luftwaffe begrüßet die befreiten Brüder in der Ostmark" (the German air force greets its liberated brothers in Austria). The threat of the roaring air fleet changed into a friendly greeting and to an acceptance of the enemy as a liberated brother. People threw their Austrian emblem away, substituted for it a little swastika, and without the pressure of a guilty conscience were allowed to discover suddenly that they were suppressed subjects whom the Nazis helped to become "befreite Brüder der Ostmark." The real *Anschluss* was not achieved by the German propaganda machine. Goebbels' leaflets without bombers are laughable but in combination with physical force they help to destroy the last vestige of enemy morale. Psychological warfare helps to strengthen one's own group, to weaken the morale of the others, to create the latent spirit of a fifth column; it is best used in conjunction with real action. Battles are won by force but psychology can help save some energy, to avoid resistance after the decisive victory.

I think that the greatest importance of psychological warfare lies in the preparation of the peace after the struggle. The defeated group, after having lost the physical means of defense and aggression, often relies on the so-called "unconquerable spirit." The Nazis have taught us, however, that spirit can be conquered, that the masses can be prepared to accept peace. Psychology will also help make our own armed forces and our own country accept peace after our victory is won, to give up the lust for destruction, aggression, and revenge. This does not mean that *psychological peace-fare*, so to speak, can eliminate the consequences of an unintelligent peace treaty. Peace treaties are not made by psychology but by the constellations of political and economic power.

Psychologists who have decided to support the democratic cause have to recognize another limitation of their efforts to destroy Nazi ideology and to strengthen the democratic attitude toward life.

Nazi psychologists have the easier job. The destruction of ego-strength, the arousing of primitive infantile id urges, the efforts to make people give up their personal civilized super-ego in exchange for the primitive group-super-ego and ego ideals of the primitive and cruel Nazi creed are much easier than the strengthening of the ego, the support of the intellect. Education is always difficult. The reality-principle is in constant danger of being defeated by the latent urges of omnipotence, dependency, blind hate, and aggression. It is harder to develop kindness and tolerance, faith in the power of the intellect, than to arouse hate and cruelty, faith in brute force. Such insight into the limitations of the democratic effort, however, also has its great strength. It is our belief, perhaps our dogmatic belief, that the primitive infantile dreams of omnipotence will—must—prove futile in the face of the strong instinct in human beings to grow to adult maturity, to be healthy, to outgrow the primitiveness of early childhood. The late Professor Freud expressed this belief in the words: "The voice of the Intellect is soft, but it is persistent."

SUMMARY

Psychology cannot replace history, sociology, or economics. Ideologies are a mixture of scientific and everyday statements, of philosophical generalizations, principles, orders, expressions of decisions and faith. Only a part of the "ideology-net" consists of provable or refutable statements; the inner part, expressing faith, moods, likes and dislikes in the form of "principles," can best be compared with religious dogma. The dogma-part of an ideology may be considered as a symptom indicating the attitude of the group. The dogmas of Nazism express a primitive group attitude, a regression to an infantile state. The main part of the Nazi ideology is dogmatic, whereas the main part of the democratic ideology represents ego-strength.

We have to learn from Nazi propaganda: use the language of the enemy, accept the main parts of the enemy ideology, attack the weak points of its system, employ emotional means, use certain emotional patterns, consider propaganda only from the point of view of effect. Propaganda and education need scientific staff work with imagination. Propaganda has its limitations and can play its best part in "psychological warfare" after the victory

SHORT ARTICLES AND NOTES

BOOK PUBLICATIONS IN PSYCHICAL RESEARCH AND SPIRITUALISM IN WARTIME *

BY DOUGLAS G. ELLSON

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A NUMBER of writers in the fields of psychical research and spiritualism have mentioned a great increase in activity in these fields which occurred during the 1914-1918 World War. Such a phenomenon is of interest to psychologists as a possible manifestation of a "flight from reality" in response to the frustrations of the war situation. This paper presents an attempt to obtain objective data which could serve as an indication of the activity in question.

METHOD

The data to be presented are the number of book titles listed in two publishers' comprehensive annual catalogues under the topic headings of psychical research and spiritualism. The two catalogues contain listings for the United States and Great Britain, respectively. The data obtained cover the period from 1891 to 1940.

The sources of information used were: for publications in the United States, *The American Catalogue* (1) and its successor after 1910, *The Cumulative Book Index* (2), and for British publications *The English Catalogue* (3). The data are presented for five-year periods beginning in 1891 and continuing to 1939 for Great Britain and to 1940 in the United States. The 1940 volume of *The English Catalogue* necessary to round out the last five-year period was not available, due to present war conditions.

The numbers of titles listed under spiritualism and psychical research are presented separately. Titles listed under psychology are also presented for purposes of quantitative comparison.

Publications in the United States

In the American catalogues, titles are classified under main headings and sub-headings, so that the task was merely one of counting the titles listed under the three headings, psychical research, spiritualism, and psychology.

The American Catalogue (1) was used as a source for the period 1891-1910. This series was superseded by *The Cumulative Book Index* (subtitle: *The United States Catalog Supplement*) (2), and the latter was referred to for the period 1911-1940. In 1928 the publishers of *The Cumulative Book Index* inaugurated a new policy of including all titles of books published in the English language, and by 1930 the content of the catalogue had sufficiently altered that the subtitle was changed to *A World List of Books in the English Language*. Consequently, in

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making the count it was necessary to eliminate all publications which did not list a United States publisher and a price in dollars for 1928 and following years. No attempt was made to eliminate books from the lists for the United States when they had previously been published elsewhere, since it was assumed that for the purposes of this study listings by a publishing house in the United States were of equivalent value regardless of previous publications.

Publications in Great Britain

In *The English Catalogue* (3) the titles are arranged alphabetically when the initial word of the title corresponds to the subject-matter. When this is not the case a topic word is placed before the title and this determines the alphabetical listing. Consequently, to include all titles on, say, psychology, it was necessary to count listings, alphabetized as psychological, psychologies, psychologist(s), and psychology. Similarly, books were counted as psychical research when listed as psychical, psychical research, and psychic(s). Books were included under spiritualism only when listed under that specific topic, since the seemingly related topic "spiritual" contained chiefly topics suggesting a subject-matter relevant to more orthodox religions (sermons, etc.).

DATA

Table 1 presents the number of titles listed for the United States under each of the three topics surveyed, together with the total number of titles on all topics listed for corresponding periods and percentages based on the latter. Table 2 presents similar data for British publications. The percentage values for both tables are plotted graphically in Figure 1.

TABLE 1

NUMBER OF TITLES LISTED FOR THE UNITED STATES IN FIVE-YEAR PERIODS FROM 1891 TO 1940

Percentages are based on the total number of titles listed on all topics for the corresponding periods.

YEARS	PSYCHICAL RESEARCH		SPIRITUALISM		PSYCHOLOGY		TOTAL LISTED
	NO.	PERCENT-AGE	NO.	PERCENT-AGE	NO.	PERCENT-AGE	NO.
1891-95	1	.004	10	.041	41	0.167	24,618
1896-00	6	.022	7	.026	36	0.132	27,194
1901-05	3	.007	26	.065	46	0.114	40,242
1906-10	25	.050	33	.065	106	0.210	50,384
1911-15	27	.048	52	.093	231	0.413	56,000
1916-20	58	.124	136	.291	186	0.398	46,758
1921-25	35	.079	107	.241	264	0.594	44,416
1926-30	23	.048	58	.120	405	0.840	48,214
1931-35	28	.063	40	.090	471	1.061	44,398
1936-40	44	.081	48	.088	420	0.772	54,383

TABLE 2

NUMBER OF TITLES LISTED FOR GREAT BRITAIN IN FIVE-YEAR PERIODS FROM 1891 TO 1940

Percentages are based on the total number of titles listed on all topics for the corresponding periods.

YEARS	PSYCHICAL RESEARCH		SPIRITUALISM		PSYCHOLOGY		TOTAL LISTED
	No.	PERCENT-AGE	No.	PERCENT-AGE	No.	PERCENT-AGE	No.
1891-95	3	—	0	—	23	—	No record
1896-00	7	—	1	—	32	—	No record
1901-05	7	—	5	—	29	—	No record
1906-10	12	—	11	—	38	—	No record
1911-15	16	.028	7	.012	64	.111	57,562
1916-20	54	.121	70	.157	80	.179	44,622
1921-25	42	.070	14	.023	151	.251	60,050
1926-30	53	.075	18	.026	162	.230	70,487
1931-35	56	.073	14	.018	167	.219	76,282
1936-39	20	.041	6	.012	118	.241	48,862
1936-40*	25	—	8	—	148	—	61,078

* Listings for 1940 estimated as the mean for 1936-39

The data show both for Great Britain and the United States a relatively large but temporary increase in the number and percentage of listings under the topics for psychical research and spiritualism in the 1916-20 period. In both countries the increase in listings under spiritualism is greater than that for psychical research. The number of listings in these two topics combined exceeds the number listed under psychology only during this period. The psychological listings, which might also on a *a priori* grounds be expected to be influenced by the war conditions, do not show a corresponding temporary peak, and the changes which occur are not synchronous in the two countries.

DISCUSSION

These data offer objective support for the statements reporting an increase in activity in the fields of psychical research and spiritualism during the period of World War I. They also indicate that in terms of this book-publication index, the activity was temporary, returning almost to its pre-war level soon after the conclusion of the war. The coincidence of the peak in number of listings with the war period in both countries suggests that a relationship exists between the war conditions and the number of books listed under spiritualism and psychical research headings. A similar increase, if it be found in countries involved in the present war, will further support the hypothesis that such a relationship exists.

The inferences which can be made with assurance from the data are limited. Assuming that the peak in listings during the 1916-20 period actually represents a corresponding peak in the actual number of titles published, there are at least two interpretations possible. The peak might represent merely the activity of a relatively few persons who wrote books to express their interest or belief. On the other

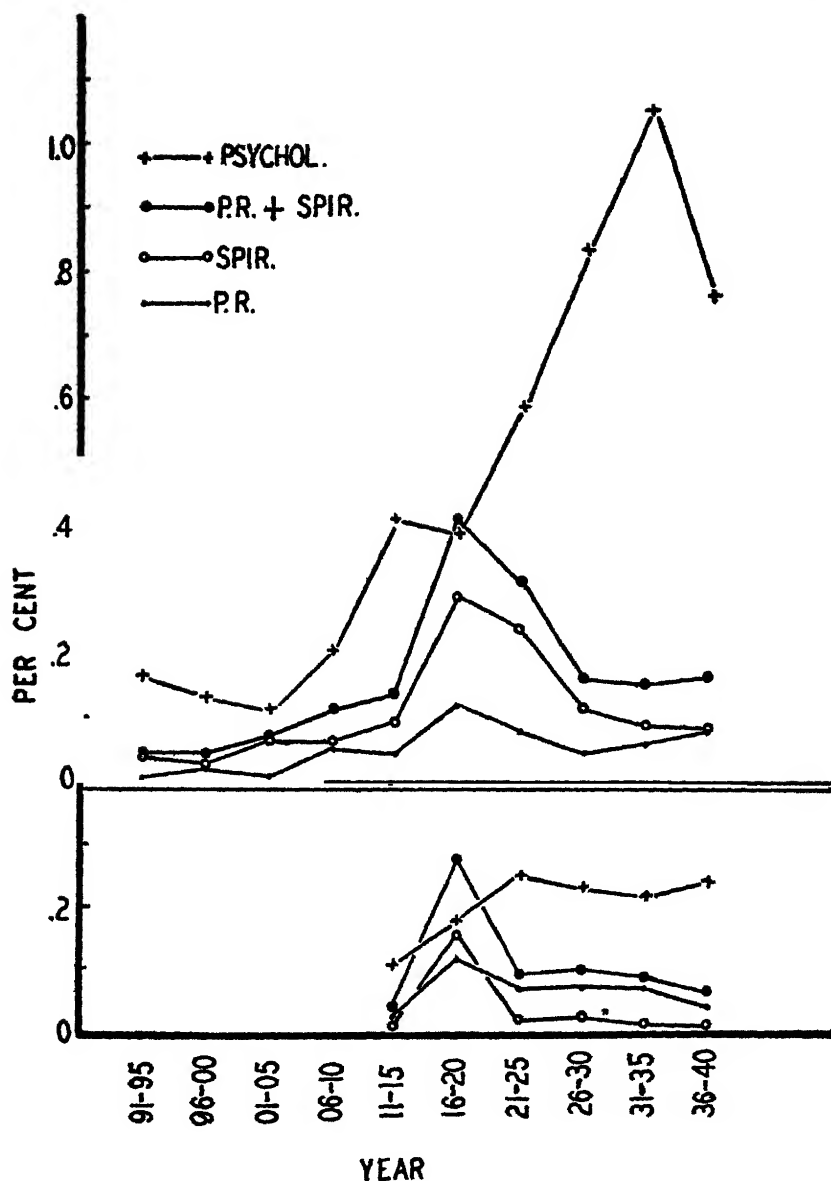


FIG. 1

Percentages of the total number of titles listed which were classified as Psychological Research (*P.R.*), Spiritualism (*Spir.*), and Psychology (*Psychol.*) in five-year periods from 1891 to 1940 for the United States (above) and for Great Britain (below). Percentages are based on the total number of titles on all topics listed for corresponding periods. These totals were not available for British publications until 1911.

hand, it might represent the response of a larger group which bought books, creating a demand which publishers attempted to meet by publishing more titles. Data on number of copies sold would permit more certain inference as to which of these alternatives was more likely. Unfortunately, these data are not available.

SUMMARY

The number of book publications (titles) listed under spiritualism and psychical research headings in publishers' comprehensive annual catalogues is presented for five-year periods from 1891 to 1940. A large but temporary increase in the number listed was found for both Great Britain and the United States during the 1916-20 period, a period which includes the last three years of World War I.

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FACTOR ANALYSIS IN THE STUDY OF PERSONALITY *

BY DAEL WOLFLE

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ONE who is interested in applying factorial methods to the study of personality starts with three beliefs about factors of personality. He believes, in the first place, that personality may advantageously be thought of as consisting of an unknown number of more or less separable traits or trends. This is not a new belief; it has been held by everyone who has tried to construct extroversion-introversion, ascendance-submission, or masculinity-femininity scales. It is involved in Spranger's value types and in Allport and Vernon's scale of values. As a different example, the factor analyst would expect to find rather distinct types of motivational trends coexisting in the same individual and would not expect to find motivation all due to one undifferentiated striving. Again, this is in line with common psychological belief. We are all familiar with the ways in which man's drives and motives are classified in terms of their physiological bases or in terms of common properties of their goal objects.

The factor analyst, then, agrees with most psychologists that personality may profitably be divided into a number of more or less specific traits or trends or factors.

The factor analyst believes, and this is the second of his three beliefs, that factor analysis is a powerful method of exploring the complex maze of personality manifestations to find those bits of behavior, those attitudes, those habits of thought and action that hang together to compose the factors making up personality. While he believes his methods capable of isolating the major traits of personality, he does not believe that factor analysis alone is able to establish their importance. For that task he needs and wants the cooperation of the clinician and the experimentalist.

The third of the factor analyst's beliefs needs a preface. In studying personality we must always start from the fact that each person displays a complicated pattern of behavior that is his individual personality, and we must agree that the variability in personality is so great that perhaps no two persons have ever been or will ever be identical personalities. Not only must we start from these facts but our methods of description and analysis must eventually lead us back to them. If one prefers to think of each personality as a unique and unanalyzable whole, then one's description certainly ends at the starting-point with a collection of individual personalities as numerous as the past, present, and future population of the earth, but one ends at this point by the trivial means of never going anywhere else. If one starts with the same multitude of complicated personalities and tries to analyze them into a number of distinct components, one must finish the job by showing how these components may combine to produce the complexities and variabilities of personality which we can all observe in the people about us. The factor analyst's third belief is that his methods can effect this resynthesis by stating the extent to which each personality factor appears in each person and can thereby describe a total, integrated personality.

* Presented as part of the symposium on the appraisal of personality at the meeting of the American Association for the Advancement of Science, Dallas, Texas, December 29, 1941.

If we look at the present time for complete experimental verification of these beliefs, we will certainly be disappointed. We do not even know how many factors are necessary to describe personality differences, and we certainly do not know what all of them are. The total sweep of personality has not been covered by any factor study, or even by all of them together. It may be that the labor involved is so tremendous that no one study can ever cover the whole field. It is, however, always possible for each investigator to choose some particular aspect of personality and study it thoroughly. When enough such studies are available, it will be found that many of them overlap. Then the findings, like the separate pictures of an airplane survey, can be fitted together to form a large, over-all map of personality.

Mapping personality in this fashion is very largely a task for future workers. The available literature may, however, be examined in an effort to find whether any personality factors have appeared in enough well-conducted studies to deserve attention at this time. I have gone through the literature, tabulating the factors which each investigator felt he could report with confidence. This tabulation shows that well over fifty personality factors have already been reported. But many of these have appeared in only a single study. Many are poorly defined. And many of them will probably collapse into a smaller set of factors when their relations are better studied. If we eliminate all of these questionable ones, there remains a small group of factors each of which has appeared fairly clearly in three or more studies. These will be briefly described.

A factor called *w* was reported by Webb (16) a little over twenty-five years ago in his pioneering factorial investigation of character. It has since been reported by Studman (14), Cattell (2), Reyburn and Taylor (13), and Brogden (1). Webb's original report of the *w* factor describes it as "consisting of actions resulting from deliberate volition or will." Later writers have emphasized purpose, perseverance, persistence of motives, and the extent to which behavior is influenced by interest in the future. Brogden's study suggests that persons in whom this factor is marked are conscientious, resistant to suggestion, and free from perseverative tendencies.

A second factor is called *c*, or cleverness, by Garnett (5), who first described it. It has since been reported by Cattell (2) and Reyburn and Taylor (13). The individual in whom this trait appears prominently is generally cheerful, has a well-developed sense of humor, and likes large social gatherings, but he also shows originality of ideas, grasps the ideas of others both quickly and accurately, and gets through his own work rapidly. It is of interest to note that individuals in whom this factor is prominent are tactful and cooperative, that they exert a wide influence on their friends, and that they are lacking in interest in religious beliefs and ceremonies.

A factor *s*, or shyness, has been reported by Guilford and Guilford in three studies (6; 7; 8). It has also been reported by Williams (17), Maurer (9), Flanagan (4), and Mosier (12). Using a different method of analysis, Darrow (3) also found it. In some of these studies children were used as subjects. This factor characterizes the social wallflower and the one who has difficulty in getting acquainted with strangers.

A factor of self-confidence, masculinity, or dominance has been reported by Flanagan (4), Guilford and Guilford (7), Maurer (9), McCloy (10), Mosier (12), and Williams (17). It too appears in both children and adults. The factor is characterized by the desire to be liked, ability to discipline others, a tendency to take the lead in social situations, and the absence of inferiority feelings.

A fifth factor has been reported under several names. Studman (14) called it *f*, for the flow or fluency of mental activity. Mosier (12) called it "the cycloid tem-

perament," while Guilford and Guilford (7) preferred "emotional immaturity" as a label. What looks like the same factor was found by Darrow (3) in college students and by Moore (11) and Thurstone (15) in psychotic patients. The factor is related to the active-inactive, elated-depressed, or excitable-inexcitable qualities of personality.

A factor of depression, *d*, has been reported by Guilford and Guilford (8) and Mosier (12) for college students and by Thurstone (15) for psychotic patients. It appears in such behavior traits as loneliness, worry, and fits of depression.

The final factor to be described is called "hypersensitivity" by Mosier (12) and Darrow (3). It has also been described by Guilford and Guilford (6). A similar and perhaps identical factor has been described by Reyburn and Taylor (13) and Woodrow (18). The term hypersensitivity has no physiological implications. It refers to the individual whose feelings are easily hurt, who cannot stand criticism, and who is easily discouraged.

These seven traits demonstrate two important characteristics of personality factors. One is that such factors will sometimes duplicate traits previously described by other workers using different methods. The concepts of ascendance, cycloid temperament, and depression are illustrations. Where this is true, where clinicians, test builders, and factor analysts all agree, the trait involved attains a sounder status than can be given it by any one method. The second characteristic of personality factors is that they sometimes cut across the lines separating one area of behavior from another. The cleverness and ascendance factors illustrate this point well. The person high on the ascendance factor shows, in addition, behavior which has been called masculine, and generally feels self-confident. One in whom the cleverness factor is prominent displays social qualities of leadership and a wide influence on his fellows, emotional qualities of cheerfulness and a sense of humor, and intellectual qualities of originality and of both quickness and profoundness of apprehension.

These seven factors, and even more those which have not been described here, can have only a tentative status as traits to be included in the systematic and orderly description of personality for which we are seeking until they are confirmed by other workers. Here the experimental psychologist, the clinician, and the factor analyst must cooperate. Some students of personality have been severely critical of factorial studies in their field because the traits reported by the factor analysts have not always been observed by the clinicians. There is a more useful reaction which the clinician can make to the factor analyst's traits than to reject or ignore them. He can look for them in the clinic and in the personnel interview. He can watch for them in his time-sampling studies in the nursery school and on the playground. If the factors are meaningful and important, this search will be successful and the clinician will have enriched his own knowledge of personality and increased the accuracy with which he can describe personality differences. If verification of this sort is impossible, the reported traits may well be forgotten. And some of them will have to be forgotten, for factor analysis, like other psychological tools, is imperfect, and factor analysts, like other psychologists, make mistakes. The limitations of the method should be remembered, but so should its virtues—its ability to search out regularities and relationships which have been masked by the bewildering complexity of the field as a whole.

After a personality trait becomes fairly well established, factor analysis may again be useful in efforts to refine our concept of it, to delimit more exactly the types of behavior in which the trait appears, or to clear up its relations with other traits. The best illustration of this use of factor analysis is supplied by the studies by

Guilford and Guilford (6; 7; 8) of introversion and by Mosier of neurotic tendencies (12). Each of these authors started with the most frequently used or most discriminative questionnaire items from tests devised to measure introversion or neurotic tendency. Each study showed that the concept used as a starting-point could be broken down into a number of finer factors. More important is the fact that the two starting concepts overlap; the factors of shyness, depression, cycloid temperament, and hypersensitivity appeared as components of both introversion and neurotic tendency. Here, then, is one cluster of traits analyzed out of the complex called introversion and an overlapping cluster analyzed out of the complex called neurotic tendencies. Perhaps neurotic tendency and introversion are not separate entities but two names for similar patterns of behavior. It may be that greater differences exist between shyness and cycloid temperament and between depression and hypersensitivity than between introversion and neurotic tendency. Certainly it would appear to be worth-while to leave the decision as to which basis of analysis was more fruitful until they have been adequately compared and tested clinically and experimentally.

It has already been stated that factor analysis should complete its task by putting the factorially isolated traits back together again to reproduce living personalities. How this can be done will be briefly described.

Let us suppose that we have isolated all of the major traits of personality. We may then devise questionnaires, rating scales, or more exact methods of determining just how important each one of these factors is in a given personality. We have then a set of factor scores or measures for each person and can describe him in terms of these scores instead of by means of a literary description or a lengthy case history. Here is an economy of the same type which a standard terminology has introduced into color descriptions. Instead of trying to describe the color of a rose or a tomato in words, we can express that color precisely with three figures indicating its hue, value, and chroma in standard measures. Three figures would not, of course, be enough to describe all personalities, for the number of important traits of personality is certainly greater than three, but the number required would be relatively small. We would need one for each trait which was generally accepted as an important element of personality. This number might be as small as ten, but would probably be somewhat greater. It would almost certainly be expressed in two digits.

There can be no question about the ability of a factorial description to include as many unique personalities as have existed or will exist. If we make the very conservative estimate that personality can be described in terms of ten traits and that we can measure each of these traits on a ten-point scale, we have ten billion separate personalities allowed for. If we assume that twenty traits are involved with no increase in the assumed fineness of measurement, we have room for over one hundred trillion distinct descriptions. As we add new traits to the list or increase our ability to measure differences in each trait, the number of unique personalities which may be described mounts rapidly into astronomical figures. Factor analysis can certainly not be charged with cramping all of the rich variety of human personality into a few stereotyped patterns.

There is, however, a limitation on the extent to which factors can be combined to reproduce real living personalities. Factor analysis deals with factors common to the members of a population and not with individual or specific traits. If all members of a society save one were thoroughly honest and that one was a complete rogue, factor analysis would never find a trait of honesty. In general, traits which appear in only one individual will not be found by factor analysis, although unique

patterns or combinations of traits will be. Such unique traits can never be of any practical importance and theoretically they are much less interesting than common traits. Factor analysis can deal with all elements of personality which are common to a number of individuals and which are therefore matters of scientific concern. It cannot isolate or describe the accidental traits of a single individual, but neither can any other scientific method.

In concluding this paper two points which have already been made should be reemphasized. First, factor analysis provides a powerful analytic tool for isolating the important variables of human personality. Second, the results obtained by factor analysis in the field of personality are supplementary to those obtained by other methods of investigation, provide suggestions for work by other methods, and depend for their ultimate evaluation upon the efforts of clinicians and experimentalists. By itself, factor analysis will never provide the answers to all of our questions about the nature and development of personality. But if we take advantage of the help the factorial methods offer we shall arrive sooner at a systematic and orderly description of human personality.

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"INAPPROPRIATE LAUGHTER" AND "SILLINESS" IN SCHIZOPHRENIA*

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INAPPROPRIATE laughter and silliness are frequent occurrences in schizophrenia. While the latter is an outstanding symptom of hebephrenic disintegration, the former, which is characterized by its apparent contradiction of the basic mood of the patient, usually is observed in the earlier stages of the disease.

Since the common explanation that the increased risibility is merely a result of the incoordination of the psychotic personality appeared unsatisfactory, it was assumed, as a working hypothesis, that every expressive attitude originally must also have had some *meaning*, even if it later became stereotyped and empty.

While a patient in the disintegrated stage is not very accessible to psychological approach, this method can be more readily applied to the early schizophrenic patient. The subjective experiences of the latter, therefore, might be expected to furnish some information about the meaning of his queer expressive behavior.

The present study is an attempt to analyze psychologically the symptom of inappropriate laughter and to compare it with the general silliness of the more disintegrated schizophrenic patient.

Preliminary explorations showed that only those patients could be utilized in whom the urge for prestige was not so predominant as to lead them to cover up or falsify their actual experiences, but who were also not so far out of contact that they were unable to give any adequate descriptions. The study, therefore, could not be undertaken with a large enough number of patients to permit a numerical evaluation of the results. Though some additional relevant information could be obtained from several other patients, there were eight patients (5 male, 3 female) whose descriptions were so comprehensive and had so many features in common that it was thought permissible to draw definite conclusions as to the origin and meaning of the symptom under discussion.

RESULTS

All patients interviewed gave the same information that the *mechanism of laughing was activated much more easily* since the onset of the illness: "You just touch a little button and I laugh like hell, but it does not do you any good; it hurts more than anything, it's just a little mood, you know damn' well it is, you're not normal when you're laughing like this. You are in a little depression. You'll laugh at some incident and ten minutes later you'll be surprised you laughed at it." (St.)

That the laughter functions as a *relief from tension* is also expressed in a similar way by all patients: "I usually feel tense, it makes me feel lighter-headed if I smile." (Mn.) "It is an outlet for mental uneasiness." (Ha.) "You smile to laugh it off." (Zi.) "Sometimes it is an escape from tension." (St.)

While these two features, the easy provocation of laughter and its function as a release from tension, may give some of the general background of the symptom, they by no means suffice to reveal its entire meaning and thus to characterize it.

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For further understanding we are therefore referred to the information obtained from those eight patients who gave a more comprehensive view of their subjective experiences. From this it appears that the basic experiences characterizing the situation from which "inappropriate laughter" arises in each case have the following three features in common:

1. A feeling of complete frustration by unsurmountable difficulties.

"Everything may seem grotesque and this it's-no-use feeling may come too. The more you try the more it goes against you and you just despair. The more I try the worse I get." (He.) "Everything seems to have gone wrong. . . . I don't seem to be getting anywhere." (Th.) "It seems there is something I can't do anything about one phase of my thinking." (Ch.) "It is kind of losing contact . . . unhappy mood . . . I'd like to do something and then I just don't feel like doing it . . . if I look at a newspaper and don't know what to do with it . . . everything seems dull at those times." (Ha.) "Sometimes I think the appearance of things is not funny at all but I laugh at the position it puts me in, I'm powerless to help these positions, just an awkward position . . . uncertainty makes you laugh . . . it's just a feeling like caught in a net." (St.)

2. The vital importance of the frustration is realized.

Patient M., trying to make himself understood, liked to express himself in similes: "Just think you were told to move a huge iron ball from here to the wall a few feet away. It is awfully important because the life of a hundred people depends on your being able to move it across, but you just can't do it. The 'terrific weight' stands for being weighed down with sickness. Something you could not get at. The idea of being sick in the brain and trying to get on in a normal way, carrying on the normal routine, getting up, eating, conversing with other people . . . it is so antagonizing . . . laughing at the futility, if something comes up that is beyond my way of thinking. Sickness was beyond." "When I try to explain I might have laughed at the mess my brain was in. It would always seem foolish to explain, like trying to lift a huge iron ball." Patient M. also gave another version of the same basic situation: Laughter not only as expression of frustration which seemed "so foolish" but also as accompanying moments of short temporary release from the captivity of the psychosis at its height: "As if a man who was confined to a dungeon for five years were suddenly released from his chains, you naturally laugh in a foolish way, or better still, men marching through the desert for days, craving for water, and they suddenly find water and they laugh . . . everything seems funny like a joke. . . ."

The great personal importance of the frustration was implied also by the statements of the other patients; the frustration always was connected with some kind of inability to keep up with the situation.

3. The frustrating situation involves integrative elements of a bewildering and bizarre humor.

Patient St., who mentioned the feeling of isolation as the source of his laughter, said, "Lonesomeness, because you can't do anything about it. . . . It is childish to be lonesome because there are one hundred million people in the world, but you can't do anything about it and you just laugh . . . maybe it's not funny but you can't do anything but laugh." The realization that the situation was somehow grotesque was expressed by other patients as follows:

"When I like to do something and don't feel like doing it, it is most puzzling. . . . I can't have as much ambition as I want to, that seems funny . . . when I don't know what to make of myself . . . that's what makes me laugh." (Ha.)

"I suppose I laugh or smile because I don't know what else to do. . . . It's my own condition, I suppose, I have not been clear about those things myself . . . the laughing sort of clears the situation for the time being . . . kind of satisfaction . . ." (De.)

"I laugh at everyone, I don't know what to do else . . . sure, I'm puzzled." (Kr.)

"I don't know what to make of the situation. . . . I am so queer to myself, I'm different from anyone. . . . I just can't seem to get settled mentally. . . . I have tried crying and laughing, neither seems to have helped. . . . I tried to laugh but I am sad, I'm confused, everything is not going right. . . ." (Th.) *

A close resemblance to the first patient's (St.) attitude was revealed in patient M.'s statements, previously cited. Asked if the situation in the desert contained

any elements of humor, he said: "Why yes, to think that they have worried so much during these days and the water has been there all the time!" In the iron-ball situation the element of humor appears again: "You have to carry the ball just a few feet from here to the wall but it absolutely cannot be done." And with patient's own sickness: It was "so antagonizing" for him to try to carry on the normal routine while at the same time his brain was "in such a mess." There was such a discrepancy between his living a normal life as if nothing had happened and the actual state of his mind that was "beyond my way of thinking . . . it would almost seem foolish to explain it."

CONCLUSIONS AND SUMMARY

Loosening of the personality and the need to release tension may be considered as general activating factors of the frequent "inappropriate laughter" of schizophrenic patients. Its meaning, however, reveals itself only through analysis of the subjective experiences of the patient, information concerning which can be obtained from patients who are able and willing to express themselves adequately. The situation in which the schizophrenic patient experiences himself is characterized by the realization of vital danger (expressed by the similes: "The life of a hundred people depends on it"—"Soldiers marching through the desert craving for water"—"Like caught in a net") and by utter frustration: "You can't do anything about it . . . laughing at the futility." That these two features constitute an unbearable situation is self-evident, but it takes a third feature to render understandable why laughter is the *appropriate* reaction. Despair, anxiety, and resignation, but why laughter, even though it is known that laughter is one form of release from tension! The third feature is the unique bizarreness, the ridiculousness of the situation in which the patient finds himself which calls for laughter and nothing but laughter as the adequate expression. The similes one patient gave are very expressive: "To think that the water for which the soldiers in the desert have been craving has always been there"—the big iron ball whose removal—although impossible—would save the lives of a hundred people would only have to be rolled a few feet! It is the discrepancy between the apparent simplicity and the self-evidence of the task and the utter impossibility of carrying it out which supplies this element of grim humor calling for the relief of laughter. The fundamental experience of isolation which is part of the schizophrenic personality change demonstrates the same feature of bizarreness: To think that one can be lonely with one hundred million people around! That one is the captive of his own biological self: longing for contact but completely isolated amidst throngs of people. The extreme case of this type of bizarre experience which impresses one as the creation of a nightmare is described by the patient who realizes that he is carrying on the apparently so simple task of routine living while at the same time he experiences that this same personality of his which is carrying on actually is in a state that is "beyond my way of thinking"; "weighed down with sickness—something you could not get at." It is the same self that is affected and that is wondering about it. And when the patient temporarily did "come out clear in my head" he felt "very foolish" because—if we may use the patient's own simile—"the water has always been there!"

The kind of humor we have been witnessing here has none of the qualities of pleasantness and comfortableness; there is only a delicate balance between this humor and tragic despair. It is interesting to note that the humorous reactions which the normal schizoid personalities display are usually characterized by the same pathetic note and by lack of idyllic pleasantness.

We now feel urged to reconsider the correctness of the term "inappropriate

laughter." Actually, the reaction of laughter is the only appropriate expression in the unique situation of the schizophrenic who experiences his own personality disintegrating. Inappropriate indeed is the situation of disintegration to the concept of the human personality with its outstanding trend towards wholeness. One may therefore say that the so-called inappropriate laughter may be a definite sign of insight to the degree that the patient realizes the uniqueness of his personality involvement. It is the "normal zone" within the psychotic personality which reacts to the psychotic imprisonment with laughter.¹

The value of an understanding of the symptom discussed in this paper lies in the realization that a symptom which may be superficially explained merely as a sign of psychotic incoordination actually reveals itself as a comprehensible personality reaction. It is indicative of the personality-wholeness, some degree of which persists even in a state of apparent disintegration. In spite of the extension of the psychotic splitting into the "vital depth" of the personality there remains a certain enduring outpost which preserves the total function of the personality in the catastrophe. The importance of a searching consideration of the subjective experiences of the psychotic for the analysis of superficially incomprehensible and seemingly inappropriate symptoms is stressed by the result of this study. One might object that the interpretations offered by psychotic patients prove nothing but their ability to rationalize. This would not, however, explain the fact that various patients volunteered very similar information which showed that their experiences had in common the three features previously described. Moreover this objection would not account for the *obviousness* of the interpretations which, to the writer's mind, exists.

It is not our pretense that the revealed meaning is always actually attached to "inappropriate laughter." It should also be kept in mind that the *meaning* is not the same as the *cause* of a symptom. Without its cause, the schizophrenic disintegration, the symptom of "inappropriate laughter" would not exist; but it may continue long after it has lost its meaning! In view of similar developments of other symptoms it seems most likely that with increasing emotional dulling the laughter gradually loses its previous significance and becomes more or less an empty automatism. As one patient stated: "Sometimes it is only reflexes from my facial muscles and I don't intend to laugh at all." In this case laughter is apparently no more than a stereotyped gesture, an empty symbol of its original meaning.

What is the relation of "inappropriate laughter" to the frequent *general silliness* of hebephrenic patients? As opposed to the former symptom, "silliness" in most cases does not contradict the mood that prevails on the surface. It therefore expresses a more uniform attitude than the one revealed by "inappropriate laughter." The aspect of inappropriateness is here given by the discrepancy between the patient's silly behavior and his actual predicament.

Silliness—if we may transfer conclusions from the analysis of "normal" silliness due, for instance, to intoxication or to situational provocation—may be considered as a superficial, effortless type of reaction in which the individual enjoys his own temporary disintegration in giving up the complex control he otherwise always has to maintain in confronting the world. His attitude may be compared with the pleasurable relaxation of someone who, after trying to steer a steady course through strong currents, temporarily gives in and enjoys his own aimless drifting. This attitude has two general features in common with "inappropriate laughter": (1) loosening of the personality structure which permits the easy activation of

¹ However, it seems quite possible that, because of his repressive tendencies, not every patient is consciously aware of the actual meaning of his laughter.

silliness; (2) a release from tension. The question therefore arises whether or not the previously discussed *meaning* of inappropriate laughter is also attached to the attitude of general silliness.

A review of the patients who have been interviewed for this study shows that there is no strict delimitation between "inappropriate laughter" and silliness. In several patients there are indications of both and it would be difficult to say where the emphasis should be placed. In this group "silliness" seems to be nothing but a generalization of the reaction seen in "inappropriate laughter." To these patients everything seems to reflect their own unsolvable problem and their silly humor, which contains a distinctly grim note, actually has the same meaning as "inappropriate laughter."

In other "silly" schizophrenics, however (e.g., as was observed in the later development of the previously cited patient M.), the grimness of the humor seems to recede with the fading-out of the normal control within the psychotic personality. The patient here is "swept away" by the wave of his silliness and there is less tension in his disorganization. The frequently abrupt shattering of the smooth surface in apparently happy silly schizophrenics, however, indicates that even here the predominant attitude is superficial and frequently not quite genuine. The observer may often notice the compensatory trend of the "happy silliness." The more transparent the compensatory trends become, the more the impression of deliberate "clowning" arises: "to avoid misery"—as one of the patients put it. Even if tension therefore does not become apparent in the superficial reaction, it nevertheless may still be present in the depths of the personality.

In summarizing our comparison of "inappropriate laughter" and silliness the following may be said:

In both reactions there is a precipitating loosening of the personality and both attitudes function as a relief from tension, even if the tension may have completely disappeared from the surface, as in many cases of hebephrenic silliness. Both are reactions of frustration and imply that any active solution is impossible. "Inappropriate laughter" is actually the appropriate reaction to a unique situation (the experience of the psychotic disintegration of the self) which contains a note of grim, bizarre humor. The same meaning may reveal itself in those "silly" hebephrenics in whom the humorous reaction has become generalized. The increasing disorganization of personality may here be experienced by the patient in the discrepancy between the actually depressed mood and the generalized tendency to react with laughter and silliness. With the "normal zone" of the personality abandoning all resistance, there results the "happy silliness" in which only the occasional impression of deliberate clowning tells of the original conflict and the patient's vague realization of the disintegration of his own self.

A SYMBOLIC ACTION DURING BEREAVEMENT

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THE bereavement situation has an intrinsic interest for the psychologist of human personality, because bereavement, in one form or another, intervenes as a decisive turning-point in every life history. Specific cases may also have a secondary interest, for, like any severe crisis, the trauma of bereavement may bring to light many unsuspected characteristics of a personality which operate in veiled form at other times, also, in the life history.

This note presents a description and an analysis of a symbolic incident in the conduct of an adolescent male American under conditions of bereavement. This case, which I shall call "Our Little Joke," for reasons which will soon become clear, should help us understand the psychodynamics of the typical bereavement situation, although the case is unusual in certain respects. Its bizarre nature merely serves to exaggerate some very typical modes of response, but the study is also designed to explain some of the unique aspects of the personality involved.

The preliminary facts came to my attention in connection with my duties as a college instructor in philosophy. A certain young man exposted "Our Little Joke" in a term paper in aesthetics, which was supposed to be an essay concerning the category of the ugly. I will not embellish his story with the affective language of that colorful sophomore production. It concerned the death of an old dog (a decrepit terrier bitch) at the hands of its young master.

The first attempt at the avowedly "mercy killing" failed, because the high-school youth was inefficient in concocting potassium cyanide in the school laboratory and administered an ineffective dose. A few evenings later, as the youth sat in the poor and unattractive "den" of his home, observing the old dog's painful breathing, a compulsive idea that it must die at first annoyed and then overwhelmed him. In a highly emotional state, he devised a noose, and hung the animal from his own hands out of an open window. After half a minute, he dropped his struggling burden, and seizing a kitchen knife, administered the *coup de grace* with that instrument. This incident was called "Our Little Joke" by an exiled Scotchman, a chronic alcoholic, who, as janitor of the apartment, found the mangled body and inferred the circumstances. The janitor's term, "Our Little Joke," was most consoling to the youth, removing the state of anxiety which had followed the action.

Both the story itself and the fact that it was told in a college term paper made some action on my part, as an instructor, necessary. I could not forget this sordid trifle, this "Little Joke," as I suspected that it was autobiographical and of clinical significance. I requested the youth to come to my office for an interview. A brilliant young man, much concerned with the ills of humanity, he had on more than one occasion in college life displayed aggressive tendencies of the sort that play such a large part in the Nazi-Fascist youth movements. But I found that his world panacea was quite as original a concoction as had been the potassium cyanide of the youth in his exposition. The first interview confirmed the conviction that the exposition was autobiographical. Subsequent interviews revealed

the full circumstances. "Our Little Joke" happened a few days after the death of the youth's mother, when he was 17 years old. Her heart attack concluded a political argument with the son. Just before the attack, she had said, as if begging for peace: "You are right, I have always known that you were right." Her death made him a complete orphan, as his father had died in an airplane crash years before. At the time of her death he admitted no grief or remorse but continued his scholastic and social activities as though nothing had happened.

The affective language of the youth's confession indicated that the events recorded in the paper were not simply historical. He was still deeply "involved," and the paper, itself an attempted catharsis, an attempted escape from "ego involvement," was also a means towards further relief. Far from evading the interviews, the youth welcomed them, and his deliberate resistance against making full confession were merely formal and very brief in duration. He sought a belated escape from grief and shock by such display. Exhibition of grief, with restraint, is typical of the bereavement situation, but the youth's initial reticence, followed a few years later by the exhibitions noted here, is, of course, atypical.

"Our Little Joke," as a deed, rather than as a story, was also typically motivated in a number of respects. The deed was an aggression. We have noted that aggression is a typical mode of response for our subject, but that particular aggression was in a situation which often provokes aggressive responses even from generally mild personalities. On one occasion in the interviews the youth gloatingly called his petty deed "my crime," and that, he admitted, was his original name for it. "Our Little Joke," the name offered by the exiled alcoholic, had been accepted with some relief as it made the aggression seem more trivial. But the old Scotch exile had, after all, appreciated the aggressive symbolism of the youth's deed, and that is why he called it "ours." The janitor was also bereaved, by circumstance, rather than by death, and he regarded the circumstance as unjust. The youth, often sympathetic in domestic relationships, did not feel that he had deserved his mother's passing-away during one of their rare disputes. Certain passages from the youth's diary indicate rather clearly that the "joke" was a retaliatory symbol. "Nothing cares," he wrote, at about that time. Other contemporaneous entries in the diary praise Nietzsche's philosophy of "ruthlessness." Nothing cares, therefore be ruthless; there is no cosmic justice, therefore aggress unjustly: This was the affective logic which motivated "Our Little Joke." But the general attitude is rather typical, bereavement is often interpreted animistically as a cosmic injustice.

Retaliation was one motive among many. The "joke" was symbolic on more than one level of affective meaning. The youth's distasteful academic exhibitionism in the paper, his enjoyment of the interviews, and the "joke" itself, all had obvious masochistic aspects. The "joke" was petty and sordid, and yet was done at a crucial juncture in the life history, at a time that would necessarily be remembered. Trivial in itself, memory of the deed would mean enduring shame, for the ego was, by that deed, irrevocably associated with the trivial and sordid. The youth's attitude towards this is illustrated by an oft-repeated dream of his, which is recorded in the diary, and which he says still recurs, although at increasing intervals. The dream is that his first offspring will be none other than a female terrier, much to the consternation of all concerned, and especially of the innocent prospective wife, who resembles the mother. The humor of the situation is not at all lost upon the youth, it partly compensates for his being haunted by a deed which he felt might so haunt him before he performed it. It was an attempt enduringly to injure himself, a self-inflicted punishment for his verbal aggression

against the mother in the dispute which culminated in her heart attack and death. But remorse, during bereavement, is in itself typical.

At the same time, in the death of the bitch, the death of another dearly beloved old female was reenacted with "cathartic" effect, and it is also reenacted with masochistic concomitants in the occasional neurotic "heart attacks" which have subsequently been suffered by the youth. The "joke" expressed a "repetition compulsion," and was thus a means of resolving a psychic trauma.

In conclusion it may be said that the above description and analysis tend to show that both the episode which we have called "Our Little Joke," and our subject's later references to that episode, veiled and otherwise, express certain psychological "dynamisms" which, in their most general characteristics, are quite typical of bereavement situations and of attempts to resolve "tensions" which are engendered in such situations. As our above discussion heavily underscored each such typical "dynamism," as soon as it was revealed, the list of "dynamisms" need not be repeated here. Much that is atypical, and even bizarre, also appeared in this particular case, but most of its unusual features can be accounted for quite easily in terms of certain traits in our subject's personality. His rather high degree of insight, together with his very high affectivity, should be noted. These should be understood in their reciprocal relations: He seems to have used his self-knowledge, on more than one occasion, only as subservient to his symptoms, as a means of elaborating upon them. His was the poet's, rather than the scientific psychologist's, self-knowledge. These specific traits do not surprise us so much when we reflect that, in this case, we have been dealing with a spoiled only child of intelligent parents, whose home life after an early age was with a rather emotional mother. "Our Little Joke" has become for him a prime symbol of the conflict between ideality and reality, as this conflict is expressed in various phases of personal and social living. Any clinical intervention as late as the time at which this case came to the writer's attention could be expected at most only to keep his tendency to dramatize within limits of legal sanity. And, after all, most personal life quests, consciously lived as such, are expressed in certain prime symbols which are, in no few cases, quite as irrational as "Our Little Joke."

THE BREAKING OF A HABIT BY SUGGESTION DURING SLEEP

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MOLL reports how De Sanctis tried to cause dreams in his nine-year-old son by whispering words in his ear after the boy was asleep.¹ He reported indifferent success with no certain connections between the dreams and the stimulus words. Professor Thurstone, in a letter to the writer, mentions an experiment in which he attempted to teach the Morse telegraph code to soldiers by having a phonograph repeat it over and over again as they slept. However, the experiments had to be abandoned before any definite results appeared.

While studying conditioning, the writer became interested in the idea of conditioning during sleep and in the possibility that verbal suggestion given during sleep might be effective. It was decided to test this hypothesis with an experiment on the elimination of nail-biting in children by the use of negative suggestion given during sleep. The suggestion was to be given in the first person, to be repeated each night for as many nights as seemed practicable, and was to try to implant the idea that the fingernails tasted bitter. The problem was to determine whether in this way the children could be led to stop biting their nails.

The experiment was performed in a boys summer camp in upper New York State. All the children used in the experiment were from New York and New Jersey and were from upper middle-class homes. The first group was the experimental group, consisting of 20 boys who bit their nails. Their ages ranged from 8 to 12 years, with a median age of 9 years 10 months. Two separate control groups were chosen from the same camp. Control group "A" consisted of 8 male nail-biters ranging in age from 8 to 10, with a median age of 9 years. Control group "B" consisted of 12 more male nail-biters ranging in age from 11 to 14 years, with a median age of 12 years.

While it might seem that 40 nail-biters in a group of 135 children (the number at the camp at which the experiment was done) is an abnormally large percentage, this is not so. Wechsler observed over 3000 school children and found out that the percentage of nail-biters rises from the age of 8 when it is 35.7, to the age of 14, when it is 42.² Thus the number of nail-biters found in the camp is about what would be expected.

For presenting the suggestion, a portable electric phonograph was used with a record made especially for the experiment. The record was made by the experimenter, but the voice was unrecognizable, although easily understandable, over the phonograph. The record contained 50 repetitions of the sentence, "My fingernails taste terribly bitter," given in a normal speaking voice. Each subject heard the record 6 times a night. As the suggestion continued 54 nights in succession, each subject heard the sentence 16,200 times during the course of the experiment.

As a rule, the children fell asleep, as measured by a failure to respond to questions of their counselors, from 20 minutes to a half hour after the lights were turned

¹ Moll, A. *Hypnotism*. New York: Scribner's, 1913, p. 178.

² Wechsler, D. The incidence and significance of fingernail biting in children. *Psychoanal. Rev.*, 1931, 18, 201-209.

out. The records were played beginning approximately two and one-half hours after they fell asleep. Before the apparatus was set up, the children were tested for sleep by being asked "Is anyone awake?" in a slightly louder voice than the phonograph produced. If a child was awake the suggestion was delayed until he fell asleep. If, during the course of the suggestion, a child seemed restless, the volume of the suggestion was gradually lowered and turned off until he seemed to be quiet and then the phonograph was put on and gradually turned to its former level. The fact that there was an experiment in progress was not known by any of the children.

Checkings of the subjects and controls were made approximately every two weeks. These checkups consisted of examining the fingernails of the boys to see if they had been recently bitten. Since all the children who were selected for the experiment kept their nails bitten down to the quick, it was easy to determine when a child had stopped biting his nails by examining his fingertips. If the nails were no longer down to the quick, and if the skin immediately in front of the nails had assumed a healthy texture and was not the coarse wrinkled skin of the habitual biter, the subject was assumed to have stopped biting his nails. The checkups took place during a routine medical examination so there was no suspicion aroused.

During waking hours no particular effort was made to break the habit of nail-biting and, if any casual therapy was tried by the counselors, it was the same for both the control and the experimental groups.

On July 5 the suggestion was first given. No change was observable until the August 7 checkup, when it was observed that one of the subjects had stopped biting his nails. On August 15 the use of the phonograph had to be discontinued due to trouble with the machine, and thereafter the suggestion was given directly by the experimenter. Although the direct suggestion was clearer it was given at approximately the same pitch, intensity, and speed as the records gave and repeated the same number of times each night.

On the August 20 checkup it was observed that two more of the subjects in the experimental group, making three in all, had stopped biting their nails. No change was observed in the controls.

On August 28 the last suggestion series was given and on August 29 the final checkup was made. At this time it was found that five more subjects, making a total of eight, had stopped their nail-biting, while there was no change among the controls. The results are shown in Table 1.

TABLE 1

EFFECTS OF SUGGESTION DURING SLEEP ON THE HABITS OF NAIL-BITERS

GROUP	NAIL-BITERS IN GROUP	NUMBER OF REPETITIONS OF SENTENCE HEARD	NAIL-BITERS AT END OF EXPERIMENT	PERCENTAGE OF NAIL-BITERS AT END OF EXPERIMENT
Experimental	20	16,200	12	60
"A" Control	8	0	8	100
"B" Control	12	0	12	100

Since no questions were asked the boys concerning their dream experiences, it is impossible to say whether or not this sleep suggestion had any effect in stimulating dreams that played a part in the process of habit breaking.

This experiment, although somewhat laborious, shows it is possible to give suggestion during sleep. The results, although based on the performance of only eight successful cases, indicate the possible positive therapeutic use of suggestion during sleep.

REVIEWS

EDITED BY EDNA HEIDBREDER

BECOMING A KWOMA: TEACHING AND LEARNING IN A NEW GUINEA TRIBE. By John W. W. Whiting. New Haven: Yale Univ. Press, 1941. Pp. xix+226. \$2.75.

Dr. Whiting's volume is a welcome addition to the excellent ethnological literature on New Guinea. From the earliest days of Keyser's monograph on the Kai down to this latest volume, descriptions of tribal life on this great island and its surrounding archipelagoes have been of a high order, and this fact makes the more exciting each fresh addition to our knowledge.

Dr. Whiting's tribe live on Ambunti Mountain farther up the Sepik River than any that have previously been described. They are the tiny negroid hill people of New Guinea, the so-called Papuans. Though they live on the broad Sepik they are not water-people; only one man in the tribe has a canoe and men do not demean themselves by fishing though women may do so. Men hunt the scarce game and both men and women cultivate the gardens precariously clinging to the precipitous slopes. Their social organization and age grading are the delight of an anthropologist: patrilineal lineages, sibs and sub-tribes all clearly defined and distinguished from one another with definitely allocated privileges and responsibilities, and an upward progression through the life cycle marked by initiations and graduations into definite age statuses. This age-grading has revamped even the dual initiatory Making of Man cult that is so prominent in the area; they have the two "sides," which among the neighboring Iatmul are life-long rivals and opponents, but the Kwoma make first initiation the joining of one "side," and the next step upward the joining of the other. Other tribes looking at Kwoma custom would be as confused as we would be, for instance, if Nebraska required that if at age 21 first registration for a presidential election was "Democrat," second registration, four years later, had therefore to be "Republican." But the Kwoma effectually prevent schism along the lines of two permanent rival organizations.

Becoming a Kwoma is only incidentally, however, an account of an interesting culture. It is written as a tribal case history to illustrate the theories of learning set forth in Miller and Dollard's *Social Learning and Imitation*. It is a study in transmission of culture, and it describes the Kwoma life cycle from birth to adulthood showing the role of reward and punishment in the process of socialization. The object is to show that culture is transmitted by means of a learning process occurring in the presence of cues supplied by man or nature, in which "motivation is provided by punishments, scoldings, threats, warnings and incitings"; it is rewarded when the proper response is made. The conclusion reached is that the study has illustrated the process of culture transmission in all societies but that future work is needed to determine whether variant mechanisms occur in other societies.

The novelty in Dr. Whiting's volume as compared with other anthropological studies is that he seeks a universal formula for transmission of culture. It is only incidental to his main purpose that he is describing the head-hunting.

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sorcery-threatened Kwoma who is initiated into the sacred mysteries by being told that the whole thing is a hoax and whose virtue consists in fighting all comers for his rights. It only happened to be the culture that he went to. For his purposes that unique end-result in his tribe, a Kwoma—who is not a Iatmul, not a Kai, not an Arapesh—is of interest only because he shows that imitation and teaching are the two most important mechanisms by which culture is transmitted. It is possible that the social sciences need to have this kind of documentation just as psychology once documented “consciousness” before it interested itself in what kinds of consistency there are in the make-up of different individuals, and what kinds of experience are relevant in producing these personalities. Few psychologists would urge, however, that it would be a step forward for them to go back to documenting “consciousness” and I have at least an equal doubt about anthropologists’ taking an analogous step.

An anthropological field trip to an unbroken culture is always a great investment of money and effort and to justify itself it must attempt more than to illustrate again a universal formula which can be illustrated quite as well from our own culture—or from any culture. One such possible justification is that it may document the nexus between particular kinds of disciplines and particular kinds of aggression, or between a child’s rejection by a parent at a certain age and a lifelong insecurity. In the case of the Kwoma it might document, for instance, the reciprocal relation between never holding on to a child when you strike him—and he is quite often struck—and the adult Kwoma’s unparalyzed counterattack on an environment of people who “beat, insult, scold, punish, sorcerize and even threaten to kill him.” Or it might investigate their aggressions in relation to an extremely privileged babyhood in which the mother is freed from household labors to sit with the child as her sole charge for a couple of years and who then implacably withdraws with what the children observed certainly interpreted as rejection. Strikingly enough the sanction constantly used in Kwoma rearing is “Don’t be a baby,” “Be a man”; though babyhood is the golden age when all things were perfect. The sanction they use is hardly a well-selected “reward” in terms of Kwoma experience, but such matters are not relevant to the kind of universalized theory of socialization that forms the subject of this volume, and so they appear only incidentally.

Dr. Whiting has asked too little of his material. If in the future he adds to his universal question particular questions about the specific experiences in Kwoma life which foster these aggressive, ghost-fearing, hoax-perpetrating Kwoma adults he will make a more important contribution to our understanding of teaching and learning. It is the old scientific paradox: that the most detailed investigation of specific interrelations is the only route to the laws we stand in need of.

RUTH BENEDICT.

Columbia University.

SCIENCE AND SANITY. AN INTRODUCTION TO NON-ARISTOTELIAN SYSTEMS AND GENERAL SEMANTICS. By Alfred Korzybski. (2nd ed.) International Non-Aristotelian Library Publishing Company. Distributed through Science Press, Lancaster, Pa. 1941. Pp. lxxi+798.

The text of the 1933 edition has been reprinted; the supplementary material consists of a 69-page introduction to the second edition and an added bibliography.

The argument of the book is that many of our personal and social ills arise through the use of the Aristotelian principle of identity, leading to the confusion of the label with the thing labeled, and to two-valued “either-or” orientations. Sanity can be achieved through developing a “consciousness of abstraction,” that is,

an awareness that whatever we say about something is always a partial formulation of a few characteristics abstracted from the total event. We will not get as excited in arguments with our fellows if we realize that each one may abstract in his own way. A mechanical model, the "structural differential," serves as a reminder that abstraction follows a definite order. An ordinary recognized object, like a pencil or a piece of paper, represents our nervous system's abstraction from an event with infinite characteristics, immersed in the four-dimensional universe. While the abstracted object has finite characteristics, it is apprehended incompletely, and at a pre-verbal and un-speakable level. The abstraction of objects from events goes on in animal nervous systems as well as in human nervous systems. Words enter when labels (names) are assigned to objects. The label is not the object, and the characteristics of the name (assigned by definition) never describe completely the characteristics of the object. The experiencing person, conscious of abstracting, says to himself, "This is not this," "This is not all." Further stages of abstraction lead from description to inference, and so on, man's capacity to say further things about his own abstractions being limitless. The sanity-producing values of consciousness of abstraction are said to lie in the correspondence between the structural order of abstraction and the order of events in the nervous system. Objects, the first abstractions from events, are first registered in the lower centers of the nervous system (for convenience called "thalamic"); the cortex is responsible for verbal abstractions. In mental illness, the evaluative order is reversed, and the products of the verbal system (*e.g.*, delusions) are over-valued.

In the new introduction the general position is reasserted and some advances indicated. While the approach is said to be "experimental," one is always referred elsewhere for the extensional evidence, so there is insufficient basis within the book on which to evaluate the claims of the method in psychotherapy, in the treatment of speech disorders (through "neuro-semantic relaxation"), in the accomplishment of "the coveted thalamo-cortical integration." Any claim which the system may have as a scientific contribution remains without basis until valid evidence replaces hearsay.

The new section of chief interest to students of language and meaning is concerned with $\frac{\text{over}}{\text{under}}$ definition (pp. xxxii-xxxvii). To believe too much in a verbalism is to evaluate by over-definition. Intensional definitions, through over-limiting the terms, fall on the side of over-definition. To evaluate without enough facts is to commit the error of under-definition; extensional definition must always be incomplete and hence fall on the side of under-definition. It follows that most generalizations must be both over-defined and under-defined, depending upon whether our attitude is intensional or extensional.

A contemporary flavor is added through sections on the Maginot line mentality, wars of and on nerves, Hitler and the psychological factors in his life. There is a final appeal to governments to use specialists to "conserve and prevent the abuse of human nervous systems."

A table (pp. xx-xxii) gives in parallel columns 52 contrasts between Aristotelian and non-Aristotelian orientations, reinforcing the implied claim that all that is up-to-date and beneficial in science and therapy is non-Aristotelian. Like the book itself, the table includes distinctions of importance, others which are of doubtful validity, others which are primarily polemical (*e.g.*, Aristotelianism is antiquated, non-Aristotelianism modern).

ERNEST R. HILGARD.

Stanford University.

THE SOCIAL LIFE OF A MODERN COMMUNITY. YANKEE CITY SERIES. VOLUME ONE.
By W. Lloyd Warner and Paul S. Lunt. New Haven: Yale Univ. Press, 1941.
Pp. 460.

Essentially an empirical study of the differential class structure, rank, composition, and activities of the 17,000 members of a modern New England community, this volume is the first in a series of six which, when complete, will comprise a work of truly monumental proportions.

These results of ten years of coordinated, intensive research by Dr. Warner and a research staff varying in number from four to fifteen, studying a well-integrated community with the techniques of the social anthropologist, must be of interest to all social scientists. Especially interested will be those who have wondered why it is we know so much about the Zuni, Samoans, Arapesh, etc., and so precious little about our own culture.

This first volume contains a few preliminary chapters on conceptual framework, field techniques, and a general orientation to the community along with a summary of the findings. Predominantly, it is concerned with the way in which the members of "Yankee City" have been divided into superior and inferior classes. Thus most of the chapters are "class-angled," if not by title then by content, and one may get an over-all notion of the book if one thinks of the exposition as hinging around painstakingly gathered empirical and quantitative data on such topics as the following: class and the social structure; biological and ethnic composition of the six classes; occupations of the six classes; how and for what the six classes spend their money; what classes get what houses in what areas; class membership in cliques and associations; political structure in a class system; arrests and crime among the several classes; and reading and symbolic behavior of the six classes. Plainly a "class conscious" volume—and were the phrase "social class" not become as odious as certain words pertaining to another subject-matter from which the veil is gradually lifting, it would probably have appeared on the title page.

The empirical discovery of the existence of six stratified social classes (described in a brief chapter on "How the several classes were discovered") is referred to as "probably the most important and interesting aspect of the entire research." Criteria of social status in Yankee City are several, and no simple economic determinism obtains as it seemed to in the Lynds' studies of "Middletown." In Yankee City, "While occupation and wealth could and did contribute greatly to the rank-status of an individual, they were but two of many factors which decided a man's ranking in the whole community" (p. 82). Top rank in the community is ceded to "old families" with a genealogy marked by three or more generations of participation in upper-class behavior; though mere long residence did not by itself establish a family at the apex of the class system. The complete picture of the class structure which emerged from an accumulation of data gathered mostly by interviews (the fundamental technique and primary source of raw material in the study) is one of a community which obliquely makes judgments of rank or worth on six levels, ranging from an "upper-upper" to a "lower-lower" class—the labeling being simply a division of each of the traditional three classes into an upper and a lower grade. The final evaluation of the social status of each individual was determined by the judgments of his fellow citizens who, given or possessing information on a man's "education, occupation, wealth, income, family, intimate friends, clubs and fraternities as well as manners, speech and general outward behavior," could fairly exactly place him in the class hierarchy. If only an individual's social participation in

family, clique, and association were known, he could be rank-ordered accurately enough by informants who "knew" the community, since members of one family in the vast majority of cases were found to belong to the same class, and cliques and associations found to be characterized by a well-defined class range.

The social characteristics of the people of the two upper, two middle, and two lower classes are summarized in the final three chapters of the book—with no suggestion that "the last should be first," for this is an empirical study (though it seems that the upper classes bid for salvation and bury their dead in places set apart from those used by the lower classes).

It is a pleasure to note that the book whose pages are spotted with charts, tables, percentages, and "statistically significant differences" is not tediously factual—largely because of a 75-page chapter called "Profiles from Yankee City." With a series of "composite" sketches, the salient characteristics of typical individuals, families, cliques, and associations are described in interaction in the context of the community. Quite the best reading chapter of the book, it is done with a Tchchevovian touch and is worth contrasting in tone with Thackeray's *The Book of Snobs*, which the reviewer recommends to all who want a satirical analysis of class in preference to a statistical analysis.

While the "Profiles" chapter makes good reading, its inadequacy for one of its purposes, "to show how it feels to live in the class system," points to the chief lack in this volume. For, with so much empirical data on the existence of stratified classes, there is a dearth of material on the individual's reactions to his station in the class structure. The authors have explicitly stated the limits of their concern with the individual: an investigation of his social participation in his particular part of society. But this leaves still undone a major problem in social psychology: granting that there are social classes in our society, how do individuals feel about their positions in the social hierarchy? To what extent is everyday behavior motivated by "upward strivings of the ego"? How do the 85 per cent of the population of Yankee City in the three lowest strata react to barriers to vertical mobility, to frustrated ambitions? What conflicts does an "open class" ideology provoke in a culture in which there are vertical inequalities of opportunity? The authors tell us of cognitive awareness of a social hierarchy but of affective reactions to inferior and inferior rank, of the individual's reactions to invidious comparisons, they say almost nothing in this volume. It is hoped that Dr. Warner will expand his frame of reference to include the person *qua* person in a subsequent volume, since in the chapter on "Field techniques used and materials gathered" it is stated that data on the personality level (case histories, autobiographies, psychoanalytic interviews) were obtained.

One extraordinary thing will be noted in this monumental research (no one will quibble about the use of the adjective "monumental" who reads about "nearly 17,000 social personality cards"—one for each individual in the community upon which was entered the relevant data which placed each individual in the social system): to one familiar with Veblen's *Theory of the Leisure Class*, almost no finding will come as a surprise. Although this volume makes no attempt to relate its material to sociological analyses of social class, the restraint of the authors in suppressing the phrase "As Veblen said" before many a conclusion is beyond the ken of this reviewer.

JOHN ARSENIAN.

INTELLIGENCE, POWER AND PERSONALITY. By George Crile. New York: Whittlesey House, McGraw-Hill, 1941.

Dr. Crile has in previous publications shown a flair for physiological theorizing on a grand scale. The present volume continues this tendency. The formulations offered are practically breath-taking in their magnitude, and if this tends to set off a counter-reaction of skepticism, the reader will still find himself stimulated to thought in unaccustomed patterns—an exercise needed by psychologists no less than physiologists.

The major thesis of the book is that "intelligence, power and personality are dependent on the absolute and relative size of the brain, the thyroid gland, the heart and blood volume, the celiac ganglia and plexuses, and the adrenal-sympathetic system" (p. 275). Actually, relative rather than absolute size is stressed throughout. The method employed is the comparison of animal species rather than individuals, hence the terms "intelligence, power and personality" are not used in the common psychological connotation.

The author asserts that "outburst energy" is related to dominance of the adrenal-celiac system (cats, rodents), whereas endurance energy (wolf, deer) is characterized by relatively larger thyroids. (His statistical evidence is by no means convincing, but the theory sounds plausible.)

Crile attempts to develop a "power formula" which divides body weight by the sum of brain, thyroid, and adrenal weights. Neither the logical nor the statistical justification for the formula is ever adequately stated. This, indeed, is true of most of the book. It tries to be both technical and popular, and fails to be either. It abounds in misleading generalizations. For example, regarding the elephant, "larger adrenal glands than thyroid gland is the pattern of the leaf and the grass eaters the world over" (p. 110); and later, "the adrenal glands are larger than the thyroid gland in virtually all the wild land animals, including the ape" (p. 269). If the latter is true, what is the meaning of the former statement?

A deplorable lack of statistical sophistication is found in this, as in so many medical publications. On page 86 Crile cites the enlargement of the heart (1614 gr.) of *one* zoo lion, as compared with *one* wild lion (860 gr.), relative to the "effect of the frustrations and irritations on the heart muscle in civilized man in his auto-captivity." A check of his appendix shows that he picked the largest zoo heart and the smallest jungle heart—hardly a fair procedure. The same reliance upon single cases, even when averages on a number of specimens could easily have been computed, is seen everywhere.

On the psychological level, a regrettable naïveté is often manifest. Of the unusually intelligent child he writes, "In these brilliant personalities excessive brain activity may finally reach the physical state of a breakdown. In certain instances an early senescence occurs from which there is no recovery" (p. 260). Of sex differences: "Over the protoplasmic bridge (heredity) there came to the female the care of the baby, as is seen universally in the play of little girls with their dolls . . . to the male the struggle of tribal man with his fellow man, as expressed in boys fighting with each other . . ." (p. 227). He endorses the recapitulation theory of child behavior. His use of the term "mutation" to refer to peptic ulcer, neurocirculatory asthenia, essential hypertension, etc., will confuse, perplex, or annoy most readers.

Most psychologists will feel irritated by his unhappy ventures into the field of inter-individual comparisons, especially in the human species. Yet there is a lot of sound physiology and occasionally fascinating (to me) insights into species relationships. The difficulty is in separating the wheat from the chaff.

One final word of praise for Dr. Crile relates to his social philosophy. Unlike so many physiologists and evolutionists, he is not taken in by the "inevitability of competition" fallacy. He asserts that "The present-day development of science and invention . . . has allowed solitary man to be succeeded by collective man. The action patterns laid down in the brain of children today by parents, teachers and preachers are of truth and honesty, unselfishness, industry, fairness and generosity . . . what better equipment could man have for survival than cooperation?" (pp. 231-32). And I heartily concur in his conclusion, "When civilized man realizes that his dominance has been gained through the evolution of the brain-thyroid formula, which superseded the brain-adrenal formula of his wild ancestors, he may, through training and education, lessen the exercise of the emotions by raising the exercise of reason, thereby protecting the survival value of the organs that endow him with intelligence, power and personality" (p. 280).

ROSS STAGNER.

Dartmouth College.

PHYSIOLOGICAL PSYCHOLOGY. By S. R. Hathaway. New York: Appleton-Century, 1942. Pp. xxi-335.

Here is a book with the stated purpose of providing an orientation in the field of physiological psychology which deals almost exclusively with the problem of the neural basis of behavior and consciousness. The general systematic treatment of the material proceeds with reference to the point of view that: "More and more we are being forced to look to the central nervous system in attempts to explain the observable facts of behavior. Whatever the processes of the sense organs may be, data delivered from them to the brain are nervous impulses that are essentially alike wherever found throughout the nervous system. Although certain phenomena such as after-images, color blindness, limens, selective sensitivity and the like relate more directly to sense organ structure and function, the more general problems of the consciously functioning organism are referable in the greater part to central nervous activity. It is a common error for those who are investigating the special phenomena of sensation to fail to recognize this fact and to waste experimental time and effort attempting to relate centrally determined attributes to peripheral mechanisms."

The book may be said to be composed of two main sections. The first section, divided into ten chapters, deals with the response arc and its parts, the microscopic and macroscopic anatomy of the nervous system, neurone conduction, the anatomy and general functions of the cerebral cortex, thalamus, subthalamic levels of the brain, spinal cord and peripheral nervous system, and the control and functions of certain aspects of the endocrine system. The second section of the book, divided into five chapters, considers the neural facts related to emotions, speech, intelligence, consciousness and sleep, and motivation. Clinical observations and points of view dominate the presentation, and methodological implications of these observations are almost completely lacking. Anatomical explanations and descriptions, in general, stand out above the statement of possible functional relationships of significance in the treatment of different problems. There is a minimum of reference to the quantitative approach to many general psychological topics. The book is illustrated by forty-four figures and diagrams, many of which are obviously redrawn from sources besides the author's own work, although the original sources of information on which the diagrams are based are not always indicated. Reference to experimental and theoretical sources of information are not given, for the

author states that it has been his object to overcome dull and pedantic presentation that accompanies extensive documentation. Points of view regarding highly controversial questions are derived primarily from the ideas of those whom the author considers specialists in a particular field. A selected bibliography of thirty-four titles is appended.

In this book, Professor Hathaway has brought together a considerable amount of information concerning the nervous system that will be of value to many psychologists, to whom this material is not easily available. Some parts of the book, and especially the last five chapters, will be of value as reference in some general courses in psychology. The limited point of view of the book, the organization of the material in the first section from a neurological rather than a psychological point of view, and certain logical and terminological difficulties will definitely limit its applicability as a general text in physiological psychology. The many positive contributions of the book in directing attention to the need of understanding the neural facts related to different psychological problems will cause it to be welcomed by those experienced in the field of physiological psychology.

K. U. SMITH.

University of Rochester.

A HISTORY OF MEDICAL PSYCHOLOGY. By Gregory Zilboorg, in collaboration with George W. Henry. New York: Norton, 1941. Pp. 606.

By "medical psychology" Dr. Zilboorg means approximately what today is called psychiatry. But the word psychiatry would be inappropriate in the title of his book. For one thing, the word itself is relatively new, and in this book the events leading to current conceptions of mental illness are traced from the most ancient sources obtainable. Besides, the term psychiatry now denotes a specialty in medicine; hence its meaning is not inclusive enough for the subject-matter of a book that treats of "the whole field of abnormal psychology and the contingent mass of practical and theoretical problems" (p. 13).

By "history" the author does not mean a purely objective record. To write with detachment, to achieve a thoroughly impersonal, factual account, is far from Dr. Zilboorg's purpose. Detachment he considers not only undesirable, but almost certainly unattainable. A severely objective record would, in his opinion, miss the main point of a story which is essentially an account of complexly motivated human striving to understand human weakness and failure. And the detachment which the narrator might seem even to himself to achieve might all too easily be a disguise for his own anxieties and resistances. It is one of the points stressed repeatedly throughout the book that anxiety strongly determines both the attitudes and the explanations that mental disorder arouses in its observers. It is not surprising therefore that the author does not conceal his personal convictions. His account is written neither without feeling, nor without bias.

In its basic conception the book is simple in the extreme. The general treatment is that of straightforward narrative which in the main sets forth events in their chronological sequence. In the background, but consistently utilized, is a definite standard of value by which the various conceptions of abnormality are implicitly or explicitly judged. This standard is set by the writings and practices of Freud. To Dr. Zilboorg, Freud's teachings represent the point at which medical psychology first attained a fully mature understanding of human nature.

The content of the book is as rich and varied as its basic plan is simple. The author is sensitively aware of the complexities of his subject-matter. Certainly the

book is not one of simple rules and facile judgments. The history of medical psychology, Dr. Zilboorg insists, must consider for each stage of development the whole cultural complex of the day—the religion, the jurisprudence, the social and economic organization—in brief everything that gave that period its characteristic attitudes toward abnormality. It is one of the distinguishing features of the book that cultural and social influences are regularly emphasized.

Yet the book is for the most part about individuals. The achievements of individuals form the substance of the narrative. At least as evident as the emphasis on social and cultural movements is the author's persistent interest in individuals as such. An excellent illustration is his treatment of the men and women who made the history he reports. Instead of limiting himself to a cautious record of their objective achievements, he freely introduces his interpretations of their motives and personalities. The same interest appears, perhaps even more significantly, in his belief that it is impossible to understand mental abnormalities apart from the individuals in whom they occur. He notes with approval every step made by clinical practice toward observing and understanding the individual patient.

The main thesis of the book, in so far as it has a main thesis, is that medical psychology finds the clue to its problem in the recognition of mental illness both as *mental* and as *illness*. To recognize mental disturbances as illness is to free them from the demonological conception and its attendant horrors. To recognize them as mental is to become convinced "that psychological, that is, biological forces—not physical, mechanical, or metaphysical spiritualistic forces might produce a mental disease . . . that mental disease may be considered *mental* without being related to theological dogma or metaphysical principles of freedom of the will . . . that the human mind, despite the obscurity of its origin and the impossibility of observing it directly, may be studied and treated with nonphysical or nonchemical means which are at the same time not means of exorcism, fire, absorption in the unknown, or ceremonial mysticism" (p. 294).

Dr. Henry has contributed two chapters which form something of an appendix. One of them discusses organic mental diseases, the other mental hospitals. These chapters are more objective—*i.e.*, less pervaded by interpretation—than those written by Dr. Zilboorg. But it is Dr. Zilboorg who gives the book its tone. To him history is interesting not only as a record of events, but also, and perhaps chiefly, as a basis for personal reflection. And his reflections, those of a perceptive and widely experienced student of human life, make the book a human document as well as a historical record.

EDNA HEIDBREDER.

Wellesley College.

PSYCHOLOGY APPLIED TO LIFE AND WORK. By Harry Walker Hepner. New York: Prentice-Hall, 1941. Pp. vii+771.

Because of its title and subject-matter this book is not concerned with a systematic presentation of psychological concepts *per se*. Although written for the layman, it has much to offer to college students, particularly those in courses designed to prepare a person for business and for personnel work. In a sense the title is misleading, for the general tone of the book is set by the expectations and needs of management and employees in business and industrial concerns; to that extent it has limited value for students preparing for such professions as medicine, nursing, law, or social service where knowledge and application of the psychology of interpersonal relationships is most important. Such areas as library service, agriculture,

public health, and summer camping where psychologists are rapidly establishing themselves are untouched in this treatise, while the field of family relationships which is essentially part of "life and work" is dealt with only by implication. The application of psychology to the solution of personal problems is almost completely neglected.

The writer of a text of this nature who has had a rich and meaningful background of actual experience, as this author has had, possesses an initial advantage over his more academically minded colleagues who might dare to produce a book in this field but who cannot divorce themselves from the expression of professional jargon, so-called fundamental concepts, psychological laws, and the like. In this volume ideas are expressed clearly and simply; they are systematically arranged and well documented in the approved professional manner. A particularly gratifying feature is the constant use of practical examples to illustrate pointedly the author's views. The text is interestingly punctuated with pictorial illustrations and with even more valuable reproductions of analysis charts, the content of interviews, together with samples of rating forms and various kinds of schedules. Photographs of some leaders in applied psychology (including the author's!!) are a novel device allegedly to encourage interest in their particular contributions, but one questions the arbitrary inclusion of some psychologists whose work is relatively but definitely insignificant in the field covered by the book and the omission of photographs of more important persons. Each chapter concludes with a stimulating list of projects which compels the interested reader to consider further the applications of the preceding textual content.

Approximately 150 pages are given to considering "Personality development and the adjustment concept." This section is excellent for a lay reader or an undergraduate student although it would seem that the author's clinical experience cannot be matched with that gained in his industrial and business relationships. His simplicity of expression is respected but the classification of ailments is too neatly structured to give an accurate impression of the complexity and difficulties of diagnosis and treatment of personality disorders; however, there are some penetrating observations on the *possible* reasons for behavior reflected in employer-employee relations. The chapter on "Methods of treating the maladjusted" is meager and disappointing; it is difficult to understand why psychoanalysis was the only form of therapy singled out for extended review especially in a book of this nature. The chapter on "Developing your own personality" is likewise disappointing. It is mainly concerned with two oversimplified forms of behavior that clinically do not have the importance attached to them here—introversion and extroversion; along with this there is an emphasis upon how an introvert can be encouraged to become an extrovert with an obvious premium upon the social stimulus value of personality. An introvert who wishes to sell himself to the management is advised among other things to "visit a psychoanalyst and take mental treatments." A survey of pseudo-scientific methods of analyzing character, vocational aptitudes, and personality is well done. It is comprehensive and should be valuable in removing, it is hoped, many misconceptions in the wishful thinking of untrained and uncritically minded observers, including psychologically naïve employers. With the section "Hiring the worker" the author warms up to his specialty and the remaining 500 pages include such topics as job placement and promotion, personal efficiency in mental work, the worker's efficiency, salesmanship, advertising appeals and devices, the supervision of employees, predictions in marketing, the executive and his relations with the individual employee. A concluding chapter deals with some elementary but clearly stated facts related to the under-

standing of psychological researches. The chapter on "Business cycles," emphasizing the role of psychological factors in the onset of economic depressions, and the following chapter on "Our social evolution," with its ambitious aim of showing "the basic pattern of social revolution so that we may try to *predict* some of the changes which may occur in the United States" and "to point out possible ways in which individuals may contribute to the *control* or direction of these changes," serve a logical but misplaced function sandwiched between two excellent chapters on "Predictions in marketing" and "Supervising employees."

Altogether, because of its directness, its simplicity, its concrete illustrations and examples, and its attractive presentation, this book is a worthwhile contribution in a limited but increasingly important field of applied psychology. The author is a capable salesman of a saleable product—thus he can be congratulated on two counts.

P. S. DE Q. CABOT.

Cambridge-Somerville Youth Study.

THE CLINICAL APPLICATION OF THE RORSCHACH TEST. By Ruth Bochner and Florence Halpern. New York: Grune & Stratton, 1942. Pp. x+216.

In the preface the authors state that their intention has been to give in brief and simplified form an exposition of the Rorschach test. Perhaps this serves as the best summary of their book. The writing is clear and concise, the material is well organized and logically presented, and in general the main areas of controversy have been avoided.

The first section of the book deals with the method of using the Rorschach test. Included in this section are the topics of test administration, scoring symbols, and methods of interpreting each symbol. Under the heading of test procedure, the authors outline briefly three stages of administration: performance proper, inquiry, and testing the limits. In the next chapter they discuss the scoring of responses. Each scoring symbol is defined and illustrated by several examples. The scoring system they present is a combination of scores drawn from the systems of several experts in the field, principally Beck and Klopfer.

In the chapters on the meaning of the symbols, the authors state the various commonly accepted beliefs and possibilities for each score, stressing the importance of basing interpretations not on a single factor, but on the total gestalt. No statistical evidence is given as to the validity of the statements. The omission of the problem of validity of interpretation is both an asset and a disadvantage of the book; the reader is not confused and puzzled by a mass of inconclusive and contested evidence, yet he may make the mistake of accepting without question statements which, though held by many, are not yet proved facts.

In relation to the interpretation of scores, there is a chapter on the characteristics of the cards and the types of responses they most frequently elicit. Particular attention is paid to the propensities of each card for eliciting whole, movement, color, and shading responses.

Under the heading "Variants," the authors discuss briefly the commonly used indicators of intelligence: whole responses, movement answers, general form level, originals, and percentage of animal responses.

The second section of the book covers the relation of the Rorschach test to several general topics: normality, children, mental defect, neuroses, schizophrenia, and organic cases. For each heading, the authors discuss first the general characteristics of Rorschach records typical for these cases. Then they present two or three cases for illustration. This practice is one of the best features of the book.

Verbatim records are given including main responses, inquiry, and scoring. Following each record the authors give a "blind" analysis of the case and also, for comparison, a short case history taken from other sources. Each analysis starts with a listing of the outstanding deviations in scores and content of the record. Then the interpretation is developed on the basis of these variations from the average; the authors carefully present their reasons for each statement.

The book is not a manual of instruction for learning the Rorschach technique. It is intended for those who, not intending to use the test themselves, want to know what the Rorschach test is, how it is used, and what results can be obtained from it. But even the experts in the Rorschach method will probably read the book with interest, especially the second section.

M. CLAIRE MYERS.

Wellesley College.

POVERTY AND PROGRESS. By B. Seebohm Rowntree. New York & London: Longmans, Green, 1941. Pp. xx+540.

Mr. Seebohm Rowntree's second social survey of York, England, under the title *Poverty and Progress* is most interesting and appropriate reading for the psychologist as well as the sociologist. It is to be hoped that as a record of facts it will prove invaluable to those striving to reduce, and considering how to reduce, the number of people still compelled to live at least part of their lives in dangerous and deplorable poverty.

About forty years ago, Mr. Rowntree published, under the title *Poverty: a Study of Town Life*, the results of a detailed inquiry made in 1899 into the social and economic conditions of wage-earning classes in York. This volume reports the results of a comparable survey carried out after an interval of thirty-seven years and based on a house-to-house investigation covering 16,362 families—practically every working-class family in York.

The investigators working in Mr. Rowntree's survey checked the number, age, sex, and occupation of every member of each household, the rent and condition of the house, and the number of rooms it contained. Information regarding the wages of 60 per cent of those covered by the inquiry was obtained from the wage books of employers. An estimate was made for the others.

Equipped with the information thus gained, most of which is detailed in Part I of the book, Mr. Rowntree sets out to determine the proportion of the York population living in poverty. For the purpose of this inquiry the poverty line was drawn at the standard of living attainable by a family of man, wife, and three dependent children having an income of 43s. 6d. (1936 prices) after paying rent. He adjudged the family to be above or below this line on the basis of its income regardless of whether it was wisely or unwisely spent. From some points of view this standard is abysmally low and thus open to criticism. From others there is wisdom in adopting a criterion which surely no one can regard as high and in enforcing, by understatement, an argument for further progress.

In Part II Mr. Rowntree sets out the facts he found with regard to housing, health, and education. Part III, which is one of the most interesting in the book, is concerned with leisure-time activities. At the end Mr. Rowntree adds a chapter giving a summary and conclusion, and a supplementary one, of special concern to statisticians, which shows to what extent the findings would have differed if they had been based on the sampling normally employed in social surveys instead of on an exhaustive house-to-house inquiry.

In his introduction Mr. Rowntree cites Andrew Lang to the effect that many use statistics as a drunken man uses a lamp-post—for support rather than illumination. He adds a sentence emphasizing the efforts made by all those engaged on the inquiry to be detached both in the gathering of facts and in their use. For the wealth of information thus collected the book will require study and reading.

FORREST H. KIRKPATRICK.

RCA Manufacturing Company
Indianapolis, Indiana.

PERCEPCIÓN, INSTINTO Y RAZÓN. By Enrique Mouchet. Buenos Aires: Joaquin Gil, 1941. Pp. 225.

This book is an exposition of "psicología vital" (vital psychology). In it the author takes up one by one the phenomena of perception, instinct, and reason, and attempts to show that they can be explained in terms of the fundamental principle of vital psychology, namely the "sentimiento vital" (the vital feeling, obtained through introspection, of our own individuality). *Percepción, Instinto y Razón* is divided into two main parts. In the first the author clarifies what he means by vital feeling. He then goes on to discuss the manner in which perception and normal behavior are dependent upon this basic principle of the feeling for life. In the second part, the problems of instinct and reason in human beings are considered in the light of the thesis of the vital psychologist.

Chapter I elucidates the meaning of "sentimiento vital." One element of this feeling of living which one receives upon introspection is due to somesthesia mediated through the nervous system, and another is dependent upon the distribution of internal secretions by means of the blood stream. The manner in which the ideas of time, space, causality, and unity are primarily derived from the perception of one's own existence is explained in the second chapter. There Dr. Mouchet argues, for example, that, before we receive the notion of extension and depth by means of the sense data, we already possess a somesthetic feeling for volume. The sense data only enable us to perfect the notions previously derived from the "sentimiento vital." Again the starting-point is introspection for the derivation of our idea of material quality, since it is through the perception of ourselves as material beings that we become acquainted with the concept of matter.

This leads to an explanation of how the "sentimiento vital" projects the fundamental qualities of reality onto the sense data and thereby creates what Dr. Mouchet calls vitalized reality, and to a discussion of the nature of the adaptation of man to this external world. The final chapter of the first section deals with the situation in which the fundamental processes of psychic life (the organization and perception of the external world, and of the ego) are disturbed. The disintegration of the ego structure is due to the loss of the sense of the real, and this in turn is the result of a pathological disorder which disturbs the "sentimiento vital."

The second part of the book begins with a discussion of the nature and function of instinct in animals and men, in which Dr. Mouchet makes it clear that for vital psychology the instincts form an inextricable structure with the intuitive and rational elements. They are not to be considered as separate elements in personality, but as the dynamic force behind the activities of the mind. This brings us to the topic of reason. It is to be distinguished from the instincts by its fallibility (the latter being infallible in the sense that they lead to a certain, prompt and successful behavior) and by its greater degree of plasticity. Furthermore, intelligence is not the same in the two sexes, for rationality is characteristic of men while

intuition predominates among women, both elements being blended harmoniously in the normal individual. There is a short discussion of the relationship between intelligence and language and of the role of logic in rational thinking before we reach the final chapter, "Reason and instinct," in which the author defends the thesis that there is no antagonism between the two.

Perhaps the outstanding impression most North Americans would receive from reading Dr. Mouchet's book would be of the difference in the psychological atmosphere in Argentina and the United States. While we have grown away from philosophy and have attempted to erect neat classifications which would clearly delimit the science of psychology, Argentinians such as Dr. Mouchet have continued to draw upon the wealth of insight to be found in classical writers like Kant and Bergson. They feel that the fundamental problems of psychology cannot be explained apart from a system which will integrate the facts; and they turn to philosophy to supply them with possible modes of organization. Furthermore, their interest is primarily in the broader aspects of behavior, and they consequently tend to rely more heavily on clinical data than on laboratory facts in their attempts to elucidate the basic nature of personality and perception.

B. SAMELSON.

Radcliffe College.

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THE STRESS INTERVIEW

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IN earlier studies of frustration by one of the writers (5; 6) a certain lack of correspondence was noted between behavior in actual stress situations and that observed under easy-going conditions of performance. Furthermore, there was little agreement between personality traits exhibited during stress and those "measured" by questionnaires (7). German military psychologists appear to have reached similar conclusions (1); in an attempt to select officers who will possess the qualities of bold intelligent action in the face of confusion and stress, they have studied performance under a variety of lifelike situations calculated to produce such stress. The German methods of evaluating personality are so qualitative that it is impossible to assay their worth by standards acceptable to the quantitative tradition of American psychology. Nevertheless, the field-success of officers selected by these methods gives them a rough validity.

On theoretical grounds, the procedure of eliciting in test situations behavior characteristic of the individual's performance on the job is to be commended. If paper-and-pencil tests and ratings based on casual encounters with an individual do not reveal how he may be expected to act in crucial situations, then methods of selecting men for positions of responsibility should be so patterned that candidates will exhibit some indication of how they will perform under stress.

The present report deals with the elements of such a *stress interview* and with its preliminary validation in connection with tests given to police officers.¹ Its essentials are the exhibition of typical

¹ We are particularly indebted in this instance to Dr. E. DeLong, Chairman of the Evanston Civil Service Commission, and to Lieut. Kreml and Mr. Sheabe of the Northwestern Traffic Control Institute, and to Mr. Blaine Hoover and Capt. Leonard of the Chicago Park Board.

behavior patterns through manipulation of the individual in bounded situations of stress and non-stress, together with ratings made by persons trained to base judgments on the observed behaviors. This procedure is in sharp contrast with conventional methods of American personnel selection on four points. In the first place, it supplements the characteristically bland type of interviewing (3) with situations of stress; in the second place, it is used in bounded rather than unbounded behavior situations; in the third place, it substitutes trained observer-raters for semi-trained raters; in the fourth place, it segregates for comparative purposes behavior ratings made upon stress and non-stress situations.

PERSONALITY STRUCTURE AS RELATED TO STRESS

It should be stated that we are interested in assaying the personality structure in terms of reactions made under conditions which are relatively favorable (non-stress) and unfavorable (stress) to the individual. This approach has its theoretical justification in the construct that total behavior is homeostatic-regulatory (4; 5). Just as more limited organic systems (such as circulation of blood) reacts to a disturbing condition (such as decreased oxygen) in a way that will bring about a restoration of a preexisting "constant" state, so the organism as a whole reacts to disturbing stimulation in a manner calculated to restore internal equilibrium. Individuals differ in their rate of reestablishment of internal equilibrium and in their manner of overt performance during the homeostatic sequence (8; 7). While the homeostatic reaction to an unfavorable "stress" situation would naturally be met by the disorganized and "functionally decorticate" behavior of excited emotion, many individuals acquire the capacity to maintain intelligent control of themselves. Even though this inhibition may increase (through lack of adequate immediate discharge) the length of the homeostatic sequence, it leads to socially more-acceptable adjustments than does the loss of higher-order control. It is by no means axiomatic that, when emotional tensions rise, the higher-order aspects of personality structure deteriorate. The internal and external aspects of the homeostatic process are somewhat independent factors. That is, some persons can maintain high-order control of their overtly directed behavior in spite of a high degree of internal excitation, whereas other persons with this same degree

of internal tension exhibit a breakdown of control over the external expressions of emotionality.

The stress interview is designed to select those individuals, who, when highly aroused internally, are able to maintain such intelligent control over their behavior as to be judged "poised," "master of the situation," "resourceful," and "well adjusted." It appears that some individuals manifest these attributes better when under stress than when under non-stress conditions. Another important aspect of the personality structure is the rate of recovery in outward poise and higher-order control of total behavior following removal of the stress situation. Adequate control of self during stress and quick recovery of higher-order adjustments after stress is removed are the qualities sought in candidates selected by the stress-interview technique.

BASIC POSTULATES

In any new method it is well to state clearly its underlying assumptions. Those basic to the stress interview are given below:

1. Each candidate should be observed in controlled lifelike situations related to the requirements of the job for which he is being considered. The method should involve predetermined degrees of stress stimulation which are held constant for all candidates.

2. The situation should be so structured that the individual's specific behaviors can be made the units of observation, with opportunity provided for observing *changes* produced by variations in the experimental setting. This procedure is in contrast with traditional ratings based upon summary evaluations derived from variable and undescribed situations. For example, the traditional rating scale asks, "How are you impressed by his physical poise?" whereas the way in which the problem would be handled here is, "What degree of physical poise did he exhibit in the experimental situation?" Obviously, in the first procedure, rater judgment will be based upon a situation which was either favorable or unfavorable to the exhibition of the desired quality, but, since no account is taken of this fact, the final ranking of candidates will be loaded with a variable error.

3. The candidate should be observed and independently diagnosed by an examining board composed of raters with different backgrounds who have been specifically trained for this purpose. The ratings of different observers should be combined to produce the

final scores. This procedure is also employed by Murray in his studies of the personality of college students and by the German military psychologists in their selection of army officers (2).

4. Raters should be trained to differentiate significant behavior qualities in terms of quantitative scales. They should have experience in recognizing the intervals covered by these scales and should be able to evaluate the dynamic interaction of the qualities with reference to the total personality structure and to the special requirements of the job.

5. The entire procedure should also be observed and reported upon by concealed observers, whose function it is to judge the interview as a whole and to see that the tempo of the procedure is maintained uniformly from one examination to another.

STRESS SITUATIONS

The term stress is used in this discussion to refer to that aspect of the interview situation in which the individual, highly motivated to be successful, is placed on the defensive and deliberately confused as to his progress. It is a well-known fact that, although such a situation is met most naturally by the outward display of excited emotion, the individual will strive to maintain intelligent control of himself. While stress is most accurately defined in terms of internal emotional arousal or "tension," some subtle indices of its presence are revealed to trained raters. A stress situation is one which builds tension. It presupposes on the part of the individual a desire to do well, to maintain an outward poise, and to perform with intelligent resourcefulness in spite of external distractions and the tendency of his own mounting internal excitement to break into socially undesirable behaviors. When the candidate's desire for prestige is blocked by a stress situation, behavior may deviate from the wanted norm, expressing itself in such ways as aggressiveness, bombast, the outward display of anger, nervousness, manic tendencies, incoherent speech, artificial and rigidly patterned behavior, hesitation and inhibition, forced suavity, and freezing.

It is obvious that in terms of finite analysis there are as many "stress situations" as there are different stress stimuli. In broad perspective, however, we recognize two fundamental types: (a) those thwarting exercise of the higher intellectual processes of recall and judgment, together with their effective verbal expression; (b) those

interfering with the smooth performance of complicated sensori-motor coordinations. Individuals appear to differ significantly in their relative ease of meeting these two types of situation. A person may handle himself well under verbal cross-examination, but become very rattled when stress-distractions accompany a motor performance test. The reverse situation also holds true. Since in most jobs the elements of *verbo-intellectual facility* and *motor performance* are differentially involved, the candidate should be observed in both types of stress situation.

While this deduction was arrived at upon the bases of empirical observation, the authors believe a similar dichotomy appears elsewhere. German methods of officer selection employ tests of both "intelligence analyses" and "action analysis." In the first type of test great importance is given to verbal reactions to such questions as "what would you do if," "how do you plan when," etc. Quick thinking and ability to use pertinent knowledge rather than mere quantity of information are the qualities sought. In the test of "action analysis" a complicated motor performance is observed under stress-distraction with emphasis upon the manner of acting rather than the absolute achievement score.

THE INTERVIEW STRUCTURE

With the requirements of a particular job clearly analyzed, the skilled psychologist can design a stress interview calculated to reveal the extent to which the candidates possess the qualities and relationships deemed essential to success on the job. The general pattern of the interview is the same for all candidates, each examiner being permitted a definite number of standardized questions and allowed to add an equal number of follow-up questions appropriate to the candidate's first response. In this way, the general pattern of the interview is made equivalent for all candidates and yet retains the necessary degree of flexibility.²

Work with several varieties of interview pattern have convinced

² Inasmuch as an essential feature of the stress interview is the element of surprise, it has been argued that conversations among candidates concerning questions previously asked might destroy this element. Such would be true only if the questions followed a rigid form and were read from a paper. In their use of the stress interview, the authors have composed a series of alternate forms to obviate this difficulty. There can be no specific preparation of a candidate, and, as for his general foreknowledge that "they try to get you rattled," this seems to raise tension rather than to reduce it. If stress interviews are conducted with sufficient versatility, prior knowledge is no more effective preparation for them than in the case of oral examinations for the Ph.D. degree.

the authors that experimentally induced stress³ must be made inherent to the interview situation. Anything that looks faked or staged is quickly detected by the candidate, and the entire purpose of the interview is destroyed thereby. Also, any type of stress that depends primarily on the histrionic abilities of the interviewer is impractical, and so are those requiring elaborate properties. The general interview structure that has finally emerged utilizes a single test machine and "stress" is primarily built around its operation by the candidate. Each of the three parts of the stress interview has a particular purpose and is described separately below.

Description

1a. Control Questioning: The candidate enters and faces an examining board of 3 to 5 persons, grouped around a portable test apparatus. He is asked his age, interests, and experience. This bland questioning is conducted at a leisurely pace, with all interviewers taking a friendly interest in the candidate. Reasoning, character, and technical questions are asked.

Time: 5 minutes.

1b. Control Action: The candidate is seated before the apparatus and told it is a test of his ability to do two things at once. He is instructed in the technique of operating a serial discriminator with his right hand and of signaling with his left foot whether solution to problems appearing on a revolving drum are "right" or "wrong." Both operations are to be carried on simultaneously for 2 minutes. Instructions to "start" and "stop" are delivered over earphones from a timing record. In the last 30 seconds of a trial, the timing record commands the candidate to stop his work and repeat telegraph signals by pressing on the button of a sounder key.

Time: 3 minutes.

2a. Stress Questioning: Now an examiner looks at the apparatus dials and

Purpose

This period provides opportunity to observe the candidate in a relatively relaxed state; his intellectual acuity is exhibited by answers made to the reasoning questions and his self-orientation is assayed in connection with his answers to character questions. Sometimes the subject has built up so much pre-test tension that up to 10 minutes is spent in giving him the opportunity to relax in the situation.

Just as the previous period provides a baseline for observing the candidate's verbo-intellectual behavior under non-stress conditions, so this part of the interview gives opportunity for observing motor performance when stress is relatively absent. The test is inherently difficult in that the candidate must turn from one task to another in order to keep them both going. Quantitative records of performance are obtained, though the rater's primary attention is centered on the candidate's manner of going about the tasks.

This part of the interview shows the candidate's verbo-intellectual ability when

³ Many tests with graduate students convinced the authors of the impracticability of using accusations of theft, fires started in wastebaskets, and unexplained revolver shots as stress stimuli. In all, over 50 candidates were examined with these preliminary methods.

Description

expresses astonishment that the candidate has done so poorly. The atmosphere of the interview quickly snaps from one of friendly interest to one of cold disdain. Interviewers now try to find grounds for a rejection. Doubt is cast on the candidate's experience and character. Questions come so rapidly that the candidate cannot adjust to them; any break in the candidate's defense is used to his further disadvantage. In the midst of this verbal barrage, mental and character problems similar to those of 1a are asked. The pattern of questioning is set so that each interviewer in turn will ask one "set" and one "follow up" question.

Time: 5 minutes.

2b. Stress Action: The candidate is told he will be given a chance to better his apparatus score. A ready signal is again given over earphones, but now the timing record fills the interval between start and stop signals with stories, problems, and commands, some relevant and some irrelevant to the test situation. When the candidate tries to follow the commands to tap telegraph signals, he receives electric shocks from the push button. The test ends with this "frustration."

Time: 3 minutes.

3. Recovery Recall: Now the candidate is told he had done "much better" on the apparatus test. He is asked to tell quickly the items he remembers from the questioning period and from the apparatus timing record. Examiners once more adopt a friendly attitude, thereby indicating that, so far as they are concerned, the stress of the situation has been removed.

Time: 4 minutes.

Post-Interview Methods: The candidate is now escorted from the room by an examiner and left with the feeling he has been through a very significant experience, and that, no matter what his fate, the examiners have no personal

Purpose

he is placed on the defensive. His performance is compared point for point with that exhibited during the period of control questions. If there are any reversals on intellectual and character problems, the discrepancy is noted. The whole intent is to rattle and confuse the subject and to observe how he behaves under "fire."

This part not only provides objective records of reaction under stress, but helps to heighten the candidate's tensions, and gives the interviewers an opportunity to compare his manner of performance with that exhibited on the control apparatus test. Even if quantitative records were not sought, the use of an impressive apparatus with clicking counters, phonographic instructions, etc., is essential. Alternate timing records may be used so that candidates are not set for a specific kind of distraction.

It is expected that when a stress situation (such as the apparatus test) is removed, the candidate will normally begin to recover, his composure and return toward the behavior characteristic of the beginning of the interview. To observe the rate of this recovery (or lack of it) recall questions are treated not only as an end in themselves, but as an indication of how rapidly the candidate is recovering his poise.

It is postulated that the situations described will produce stress. This has been validated in terms of quantitative measures of overt and covert aspects of emotional arousal. The entire method implies an ability on the part of the

<i>Description</i>	<i>Purpose</i>
aggressions against him. Rating of candidate is now made.	interviewers to manipulate candidates and observe their reactions.
<i>Total time: 20-25 minutes.</i>	

BEHAVIOR RATINGS AND THEIR VALIDATION

In any new method, it is appropriate to inquire concerning the reliability and validity of the measures. It should be obvious by this time that we are primarily concerned with ratings made by trained raters upon the basis of behavior observed in the bounded observational situation. The behavior rating schedule was developed empirically in a number of preliminary experiments. Reliability was tested first in connection with an examination of applicants for the job of patrolman. The validity of the measures was tested both by internal and by external checks in connection with the examination of experienced traffic control officers. In the sections which follow we will discuss in turn (1) the construction and use of the rating schedule, (2) the method of scoring, (3) the reliability of ratings, and (4) the validity of ratings.

THE BEHAVIOR RATING

During a stress interview, each member of the examining board is set to observe the candidate's behavior with reference to a number of specific qualities brought out by the situations. After the interview a question dealing with each quality is answered by selecting from a five-point quantitative scale the phrase which most nearly describes the candidate's behavior. On most qualities separate ratings are required for "control," "stress," and "recovery" behavior; on a few the rating covers some single part of the interview. The present rating scale covers ten specific qualities. These qualities and the questions asked in regard to each are seen in the sample Behavior Schedule. Below each question are given the five steps necessary for rating the quality.

It is assumed that raters using the schedule are trained to recognize behavior typical of each of the steps. Ratings on specific qualities are followed by three evaluative ratings. On these the interviewer registers his general opinion of the candidate and predicts his success on the job. No cumulative estimate of a candidate is made by individual raters. Instead, final ranking is based upon a formula which combines the scores of all raters.

Behavior Schedule

(Emotionality, Tension)

1. What degree of tension did the situation produce in the subject?
- a.* apathetic, little or no arousal. *b.* some arousal.
c. moderate tension. *d.* strong tension. *e.* so aroused is near his "breaking point" (may take form either of total blocking or incoherent speech and disorganized performance).

Control
☐Stress
☐Recovery
☐

(Dominance)

2. What degree of mastery did he maintain in the situations?
a. utterly non-plussed, submissive. *b.* hedges and qualifies, lacks confidence. *c.* vacillates in self-assurance, requires some bolstering. *d.* confident, self-reliant. *e.* dominates, aggressive.

☐☐☐

(Demeanor, Poise)

3. What degree of physical poise did he maintain in the situations?
- a.* slumped, slouched, propped, or rigid attention. *b.* somewhat slovenly, stiff, or fidgety. *c.* ordinary civilian posture. *d.* occasional deviations from alert-ease postures, but recovers. *e.* imposing appearance; alert ease (military "at ease").

☐☐☐

(Inventiveness, Resourcefulness, I)

4. How resourceful was his reaction to the verbo-intellectual situation?
- a.* inadequate, incoherent answers; or "I don't know."
b. answers simple questions only, or superficial. *c.* answers are factual, trite, routine and uninspired. *d.* answers well with slight cues, sees point. *e.* critical, pertinent, original.

☐☐

(Inventiveness, Resourcefulness, A)

5. How resourceful was his reaction to the activity situation?
- a.* utterly blocked; quits. *b.* bewildered, shifting; or one task alone. *c.* some plan of action, but bad timing and many hitches. *d.* planned increasing efficiency. *e.* organized, efficient attack throughout; unique.

☐☐

(Speed of Adjustment, I)

6. How rapidly did he respond in the verbo-intellectual situations?
- a.* slow, cannot keep up with questioning. *b.* some hesitation, halting. *c.* average speed of response. *d.* prompt, no hesitation. *e.* rapid fire answers, "jumps the gun."

☐☐

Behavior Schedule—Continued(Speed of Adjustment, *A*)

7. How rapidly did he respond in the activity situation?...
- a.* very slow, accomplishes little. *b.* slow. *c.* average speed of response. *d.* fast. *e.* very fast, ahead of machine.

Control
☐Stress
☐

Recovery

(Memory for Relevant Detail, *I*)

8. How well did he remember the details of the verbal situations?
- a.* remembers nothing. *b.* confused; makes many mistakes. *c.* gross recall; somewhat labored and disorganized; "something about something." *d.* adequate recall, some details lacking. *e.* detailed, precise, accurate, correct order.

☐(Memory for Relevant Detail, *A*)

9. How well did he remember the details of the activity situations?
- a.* remembers nothing. *b.* confused; makes many mistakes. *c.* gross recall; somewhat labored and disorganized; "something about something." *d.* adequate recall, some details lacking. *e.* detailed, precise, accurate, correct order.

☐

(Ego-Orientation)

10. How well could he forget his own selfish interests and safety in meeting the demands of stress situations?....
- a.* completely egocentric. *b.* self-protective, but some realization of conflicting demands of situation. *c.* compromises between demands of situation and self-interest. *d.* forgets self but can't maintain objective attitude continuously. *e.* forgets self-interest completely in meeting problems; easy identification with external goals.

☐☐

Evaluation: On the basis of the subject's total reactions to the interview, how would you rate him (1-5) with regard to:

1. Handling self in stressful verbo-intellectual situations?....
2. Handling performance situations under stress?.....
3. Probable effectiveness in the job of traffic control officer?..

☐☐☐

METHODS OF SCORING RATING DATA

There are several aspects to the treatment of stress-interview data. Each of these will be described separately. The first and most obvious approach to the quantification of the behavior schedule

is the *assignment of numerical values* to the letter ratings made for each of the ten specific items on different parts of the interview. This evaluation was accomplished by eight experienced interviewers. They independently ranked each of the five rating steps for each item in order of its degree of appropriateness to the stimulating situation. Usually the greatest amount (*e*) of an item was judged most desirable and given a ranking of 5 by each rater. When agreement between raters was complete, the highest possible score

NUMERICAL SCORING TABLE FOR BEHAVIOR SCHEDULE

ITEM						ITEM					
LETTER GRADE						LETTER GRADE					
1. Emotionality	A	B	C	D	E	6. Int. Sp.	A	B	C	D	E
C	15	40	32	23	10	C	8	18	30	40	24
S	13	23	36	36	12	S	8	18	30	40	24
R	13	33	37	26	11	R	..	..	..	..	..
2. Dominance						7. Act. Sp.					
C	8	17	25	40	30	C	8	16	31	38	27
S	8	17	25	40	30	S	8	16	31	38	27
R	9	15	24	40	32	R	..	..	..	..	..
3. Poise						8. Int. Mem.					
C	8	16	26	32	38	C	..	..	..	..	..
S	8	16	27	36	33	S	..	..	..	..	..
R	8	16	26	33	37	R	8	16	24	32	40
4. Int. Res.						9. Act. Mem.					
C	8	16	24	32	40	C	..	..	..	..	..
S	8	16	24	32	40	S	..	..	..	..	..
R	..	..	..	..	..	R	8	16	24	32	40
5. Act. Res.						10. Orientation					
C	8	16	24	32	40	C	8	16	24	40	32
S	8	16	24	32	40	S	8	16	40	32	24
R	..	..	..	..	..	R	..	..	..	..	..

for a given behavior in a specific situation was 40; similarly, the lowest possible score was 8. In some cases (such as emotionality) a point other than *e* received the highest rating. By this method, each of the five points on each of the ten qualities was assigned a value ranging from a possible low of 8 to a possible high of 40. The specific value assigned to each letter is given above in the scoring table.

The total score given to the individual by the raters⁴ can be determined by use of the scoring table. Each of the ten items on

⁴ Our practice has been first to collect the ratings of all judges on each item, then to drop the widest deviate on each item, and to average the remaining scores. This presumes to correct for individual prejudices and inaccuracy in observation; it is not an essential procedure of the method.

the behavior schedule receives a score (the average of scores on different parts) ranging from a low of 8 to a high of 40. The total score, which is their sum, ranges from a low of 80 to a high of 400.

The control (non-stress) score is similarly obtained, using the sum of the eight qualities rated in the non-stress situations. The range of these scores is from a low of 64 to a high of 320.

The stress score is also obtained by summing the scores for the eight items rated on this part of the interview. Like the control score, it ranges from a low of 64 to a high of 400.

The change-ratio is a derived score, obtained by dividing the stress score by the control score. It yields a ratio which, when less than unity, indicates deterioration of performance under stress, and when in excess of unity indicates improvement under stress. The range of scores is from a low of .20 ($64/320$) to 5 ($320/64$).

The total change score is a derived score obtained by multiplying the total score by the change ratio. This manipulation increases or decreases the total score in accordance with whether response has been worse or better under stress than in the control. It is an integrational value which takes into account both the absolute level of performance and the relative change occurring under stress.⁵

The evaluation score gives the raters' judgments (based on behavior observed) of the candidate's probable degree of success on the job under consideration. It is the sum of the three items noted on the Behavior Schedule under the heading *Evaluatives*, and it ranges from a low of 24 to a high of 120.

It is to be noted that in the present treatment of data no behavior item has received a greater weighting than any other. Similarly, no attempt is made to place more emphasis on one of the summary scores than another. The validity and reliability checks which follow supply a partial answer to the problem of weighting. Further research with more cases should take into account factorial loadings.

TESTS OF RATER RELIABILITY

The rating schedule and interview structure were first built up empirically by laboratory experiments with student subjects. Since

⁵ It is recognized that this integration does not place as much importance on the recovery part of the interview as is probably warranted. A more extended recovery test would have to be added before this aspect of the stress interview could be adequately weighted in a total score.

the experimental conditions were frequently changed, it is impossible to evaluate the ratings made in such preliminary work. Opportunity was provided, however, for use of a standardized form of the interview on two groups where a real job was at stake. With both of these groups it was possible to employ three psychologists with previous experience in the use of the rating schedule. The two other members of the examining boards were outside specialists who were only slightly trained in the stress-interview technique. Thus in the first group (A), the outside specialists were a police official and a civil service commissioner; this group, composed of 22 inexperienced applicants for the job of patrolman, was examined under the auspices of the Evanston Civil Service Commission. In the second group (B) the outside specialists were a police official and a former Civil Service examiner; this group, composed of 20 experienced traffic control officers, was examined for an important job in Civil Defense Traffic Control under the auspices of the N. U. Traffic Institute.

In the examination of Group A, men were selected only on the basis of the total score combining both stress and non-stress behavior. The reliability of ratings made on this population is shown in terms of the inter-rater correlations (ρ) appearing below. In this table, the correlations italicized are between the trained psychologists.

TOTAL SCORE RELIABILITIES—GROUP A

RATER	2	3	4	5
1	.77	<i>.86</i>	.79	<i>.84</i>
2		<i>.82</i>	<i>.82</i>	<i>.80</i>
3			<i>.86</i>	<i>.81</i>
4				<i>.72</i>

In the examination of Group B, men were rated not only according to total score, but also upon behavior in the "control (non-stress) and stress" reactions of the test. For the total measures (comparable to those used with Group A) rater reliability was as follows (again the italicized correlations are between the trained psychological raters):

TOTAL SCORE RELIABILITIES—GROUP B

RATER	4	5	6	7
3	.79	.74	.81	.80
4		.86	.40	.82
5			.33	.66
6				.42

For ratings based on "control" and "stress" behavior, observed independently, rater reliability was as follows. The fact that only a .56 correlation obtained between these two sets of ratings indicates that the technique aids in blocking the "halo" effect.

"CONTROL" SCORE RELIABILITIES—GROUP B

RATER	4	5	6	7
3	.72	.67	.39	.62
4		.72	.09	.40
5			.06	.48
6				.19

"STRESS" SCORE RELIABILITIES—GROUP B

RATER	4	5	6	7
3	.82	.71	.62	.63
4		.88	.52	.69
5			.53	.74
6				.42

In the comparison of these tables, it appears that while psychologists showed about the same degree of correlation in their ratings of different populations, the outside specialists used with Group A were more reliable raters than those used with Group B. Outside specialists used with Group A had more preliminary training than those who served in the examination of Group B; this suggests that training is very essential to rater reliability in the stress-interview technique.

With Group B, it was also possible to obtain order-of-merit ratings made of the candidates by their instructors at N. U. Traffic Institute. These instructors were asked to rank these men accord-

ing to their presumed success on the job for which they were being examined. Intercorrelations of this group were as follows:

ORDER-OF-MERIT RELIABILITIES—GROUP B

RATER	2	3	4
1			
2	.42	.67	.34
3		.47	.34
			.64

These intercorrelations should be compared with those obtained between raters who judged the same men in terms of their performance in the stress interview. From such comparison it appears that there is greater correspondence between trained raters who examined candidates in the bounded interview situation than between those who knew the candidates much better, but who had based their judgments on unbounded observational situations.

As a check upon the internal consistency of rater judgments in Group B, correlations were obtained between various item scores and the third evaluative rating (estimate of probable effectiveness of the man in the job of traffic control officer). These correlations were as follows:

Tension change (emotionality).....	.44
Speed of intellectual adjustment.....	.80
Speed of action adjustment.....	.46
Intellectual resourcefulness.....	.64
Action resourcefulness.....	.69
Mastery (dominance).....	.57
Int. memory.....	.56
Action memory.....	.25
Poise.....	.46
Self-orientation.....	.06

The above correlations suggest that the factors of speed of adjustment, resourcefulness, and mastery entered most significantly into the rater's judgments of a candidate's fitness for the job in question.

TESTS OF RATER VALIDITY

The problem of validating a new technique is always difficult. The best method would involve comparing at some later date the field performance of men rated "high" and "low" on the stress interview. While this is not yet possible, other validity checks

have been made. These include correlation of stress-interview ratings with (1) results on other types of psychological tests, and (2) objective indices of the traits rated, and (3) experience and order-of-merit ratings made by officials familiar with the candidate's past performance. Unless otherwise indicated, validity checks are made on the twenty experienced traffic control officers of Group B. Each type of check is discussed separately.

The total interview score correlated with scores on the Otis Intelligence Test .29 for the 22 men in Group A.

1. For the 20 experienced traffic control officers of Group B the Otis Intelligence Test scores correlated with each type of stress interview score as follows:

	CONTROL	STRESS	TOTAL	CHANGE-RATIO	TOTAL CHANGE	EVALUATION
Otis	.29	.20	.30	.21	.27	.27

The above correlations suggest that the stress interview measures qualities not highly correlated with the conventional intelligence-test scores. The Humm-Wadsworth test was also used on Group B, yielding correlations between its N (normalcy) score and the stress-interview scores which varied from .15 to .26. The O'Rourke Police Adaptability Test correlated with the total score .75 for Group A and .49 for Group B. Such positive correlations suggest that the O'Rourke test measures to some degree intellectual resourcefulness in situations frequently encountered by policemen and therefore overlaps the total interview score. It should be noted that such "resourcefulness" ratings were highly weighted in our evaluative judgments.

2. A check of individual rating items against objective measures of these same qualities was possible in a few instances. Palmar skin conductance changes were recorded throughout the examination of the experienced traffic control officers (Group B). These provided a good index of physiological arousal during the "control," "stress," and "recovery" periods of the interview. The three readings were integrated according to established procedures (9) to give the conductance recovery quotient (*Cond. R.Q.*), recognized as a measure of emotional stability. Other objective measures were obtained upon the apparatus test, namely the speed and accuracy

of each type of discrimination problem, and the changes in these scores from control to stress performance. The correlations follow:

Rating tension change (emotional stability) correlated with Cond. R.Q.....	.66
Rating speed change (control to stress) correlated with measured changes in speed .....	.46
Rating resourcefulness change (control to stress) correlated with measured change in accuracy.....	.35
Rating stress speed correlated with speed under stress.....	.81
Rating total speed-accuracy change correlated with total accuracy change....	.51

The correspondence between ratings for emotional stability and an objective indicator of the same aspect of behavior is especially significant. The relatively low correlation between action resourcefulness ratings and the accuracy scores on the machine is understandable, since observers had no way of seeing whether the responses were right or wrong. Ratings on action resourcefulness were made in terms of "uniqueness of performance," rather than in terms of apparent accuracy. The correlations between rated and measured speed change indicate that trained observers can predict what the machine shows.

3. With Group B it was possible to obtain certain external checks upon the validity of stress-interview scores. The years of experience in traffic work were obtained from the files. These showed that the candidates had from 1 to 18 years of experience and that their police ranks ranged from Patrolman to Captain and Chief. In addition two sets of ratings were obtained from the instructors of the Northwestern University Traffic Institute who were well acquainted with the reputation of men in the field and with their performance in class. Both sets of ratings were made with reference to an analysis of the job for which candidates were being considered. The first rating was made on the ten qualities described in the Behavior Schedule, but without differentiating between stress and non-stress situations. The second rating was an order-of-merit ranking of the candidate according to his presumed ability on the job. The correlations between the several interview scores and these external validations appear on the following page.

These correlations indicate that judgments of behavior based on a half-hour interview correlate positively with judgment made by persons well acquainted with the candidate's field performance. It is to be noted that correlations are considerably higher when based upon the "control" behavior than when "stress" behavior is taken

INTERVIEW SCORES

	CONTROL (NON-STRESS)	STRESS	TOTAL	CHANGE RATIO	TOTAL CHANGES	EVALUATION
Experience	— .24	— .22	— .28	— .35	— .42	— .14
T. I. Behavior Rating	.53	.34	.44	.12	.24	.41
T. I. Order-of- Merit Ranking	.74	.33	.50	.12	.12	.48

into account. This suggests that the usual procedure by which conventional (retrospective) ratings are obtained inadvertently emphasizes behavior in non-stress situations. Conventional rating procedures appear to be least predictive with reference to the direction and extent of change in behavior from non-stress to stress situations.

The negative correlations between stress-interview scores and experience are equally interesting. They indicate, perhaps, that the younger men have a greater flexibility of high-order adjustment under pressure. Older men, many of whom have held positions of responsibility, have fewer alternative modes of behavior; when their habitual mode is blocked or rendered inappropriate, they become emotionally upset and lose control of the situation.

QUANTITATIVE RECORDS OF PERFORMANCE UNDER STRESS

All measures at present combined in the interview score are based upon judgments of the candidate's *manner* of performance. If it is desired to give weight to quantitative changes in performance, the data obtained upon the apparatus test may also be included in the total. In this report we have used the quantitative records of performance only as a check upon the validity of related ratings. But our method⁶ of treating these data is appropriate in case they are to form a part of a stress-interview score.

⁶It will be recalled that the apparatus test required that two unrelated discrimination problems be done concurrently, first in a control period and then under stress-distraction. Since records of speed and accuracy were obtained for both problems in both situations, it was possible to derive four measures of the percentage change in performance (control to stress). This treatment of the data made every man his own base and, by subtracting a correction constant, the expected improvement ratio was eliminated from consideration. Since correlational analysis showed the four derived scores to be statistically independent, these were summated to give the composite performance change-score. It is the composite performance score which has been employed in certain of the validity checks mentioned above.

DISCUSSION

It should be recognized that present results are more suggestive than they are complete. The authors regard the stress interview as in a formative state. As this method is not effective under simulated (laboratory) conditions, it can be further developed only in situations where the motivation is a real job. It is therefore advantageous to open possibilities of the method at once to personnel groups who have adequate opportunities for experimentation. To such persons the authors address several comments and suggestions.

1. In the light of our present experience, it appears that selection by the stress-interview technique may be adapted for many different types of job. The kind of interview given, the apparatus used, the choice of examiners, and the qualities rated will at first have to be empirically determined by way of a job analysis. Later it may be possible to use a standardized behavior schedule for all examinations, but scored so that the different qualities deemed essential for a specific job may be weighted appropriately in the composite score. As a start in this direction, the present form of the behavior schedule is arranged so that action and verbo-intellectual performance may be rated separately. For example, some items would be important if the candidate were being considered for a performance type of field job as distinct from a planning and desk job. It is also conceivable that for different jobs a given behavior item would be scored differently. Thus, for example, some jobs require that a man be highly self-oriented, whereas other jobs require that he be able to forget self. The present behavior schedule is intended to be used for the estimation of the degree to which a given trait is possessed. It carries no implication that the greatest degree of a trait is the best degree. As a matter of fact, in our use of the schedule for rating police officers, the quantitative estimations were scored so as to place the highest rank sometimes at the top, sometimes at the bottom, and sometimes in the middle of the letter scale. A scoring table would probably be changed in rating for a different type of job.

2. The selection and training of raters presents other problems. While it is theoretically possible for any one familiar with the requirements of the job to become trained in using the stress-interview technique, it is expedient to choose raters with extreme care. The German military psychologists, whose technique of selecting army officers has some similarity to the methods described herein,

have reported extensively on the characteristics of a good examiner. He must have "an inclination for and a sensitiveness toward human contacts," be "self-disciplined and able to meet the candidate on his own level." He must already have a practical insight into human nature and a natural versatility and conversational aptitude before his training begins. Probably the best way to select examiners is through an informal stress interview. This gives the future examiner the "feel" of a candidate and helps set him appropriately. Two types of persons to be avoided in the choice of examiners are those who will take a sadistic delight in putting other people "on the spot" and those who are so "soft-hearted" that they cannot put on a convincing demonstration of mild displeasure with a candidate.

Successful use of the stress interview is likewise dependent upon adequate training. The basic requirements of training are (a) complete familiarity with the entire interview structure and the relation of its several parts to the specific items on the behavior schedule and (b) contact with the complete range of behavior covered by each of the five-point scales. Experience with the interview structure is best gained by serving as a candidate, as an interviewer, and as a concealed observer. Familiarity with the complete range of behavior possible in a stress situation can be acquired only through extended observation. Experience indicates that 25 cases from a heterogeneous population are usually adequate. Such training can be properly supplemented by analysis of motion pictures and records of extreme cases, *i.e.*, those not frequently found in a small sample. During the training period the novice's ratings are frequently compared with those made by trained raters, and his deviations are discussed. When these independent judgments approximate each other, the novice may be said to have become trained. •

3. In further developments of the stress-interview technique, and especially for its use with jobs requiring rapid sensori-motor adjustment to mechanical tasks (not involving people), it would seem advisable to include the quantitative scores of performance in the evaluation of the candidate. It should be recognized that the particular apparatus utilized in these tests is not an essential of the stress interview. Other complicated tasks which would develop stress might be employed in its place.

4. Although it has not been emphasized in the present account, it appears that the stress interview can be used to differentiate the relative facility of a candidate in handling verbo-intellectual situa-

tions involving people and his success in more individualistic mechanical tasks. The first aspect is revealed by answers to stress questioning where human relationships predominate; the second aspect is revealed by ingenuity in manipulating a complicated apparatus when under pressure. Some jobs require a predominance of one or the other of these aspects—for example, as between the infantry line officer and the pursuit pilot. Some persons can perform in both situations with equivalent ease, but probably they are the exceptions. Since the economy of training demands that we take the man whose abilities are most nearly in line with the job, it seems that differential analysis by means of the stress interview should be developed.

5. Since this method is more personally disruptive to candidates than usual selection procedures, it is well to advise with each individual immediately following his interview. One of the examiners, in a friendly aside, should explain to the candidate that the purpose was to see how he reacted to unpleasant situations such as he could anticipate in the job for which he was being considered. He should be made to feel that his performance was reasonably adequate in the trial "act" and that any personal antagonism was simulated rather than real.

6. It is recognized that the new method has been tried on a small number of cases. However, we have used the method with two different populations of policemen and have obtained consistent results. This repetition of experimentation, which is the characteristic method in natural sciences, is offered in substitution for the usual procedures of test construction, where the original sampling is larger but where subsequent results are predicted by formula alone.

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SOCIAL INFLUENCE IN THE FORMATION OF ENDURING PREFERENCES *

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IN an article published in this JOURNAL (1938, 33, 489-507), Dr. Karl Duncker showed that children modify their choice of foods under the immediate influence of a social example.

A question remained open. Are these modifications temporary, or may social influence build up lasting preferences which endure permanently or over a long period of time in the absence of the originating social cause? Does the modification of the child's behavior signify a merely momentary inhibition of his own taste? Does he choose the same kind of food as the companion he admires under the spell of his temporary presence? Or is this social influence capable of transforming personal, intrinsic likes and dislikes to such an extent that a kind of food formerly avoided acquires for him the quality of tasting better than the food originally preferred?

In order to obtain an answer to our question we continued Duncker's experiment of submitting children to a modifying social example until the fixation of the new preference had taken place. Then, after eliminating the social cause, we tested the children in isolated choices over a period of five weeks, and a whole year later for about two weeks, in order to verify the duration of the results.

The experiment was carried out in 1937-38 with children from four to six years of age in the kindergarten of the Instituto de Educação, Rio de Janeiro.¹

In order to be sure that the observed changes were actually due to our experimental conditions we adopted the method of equivalent and parallel groups; in other words, only half of the 66 children were submitted to the experiment, the others were used as controls.

Since the formation of these groups and above all the exactness of

*I am indebted to Professor Wolfgang Köhler for his interest and kind assistance in editing this article.

¹ The late Dr. Karl Duncker suggested our problem. We gratefully acknowledge the assistance of Miss Celina A. Nina, principal of the kindergarten of the Instituto de Educação, Rio de Janeiro, and of the teachers, without whose cooperation the following experiments would not have been possible.

the final results largely depended on our previous knowledge of the children's original tastes, the following test preceded the experiment.

PRELIMINARY OBSERVATIONS

Before submitting the children to the modifying social example we observed them during at least three weeks in order to verify their preferences. In the presence of the writer and her assistant, but isolated from his companions in a quiet familiar room, each child was offered on the first day two bits of different kinds of food. On successive occasions, however, he was allowed to take in a single choice only the one he liked best. This choice was made once a day two to three times a week.

As food we mainly used fruit paste because it is of constant quality, and easily available in Brazil over an indefinite period of time. Furthermore its consistency allowed it to be cut into pieces of exactly equal size, thus avoiding the choice of quantity instead of quality.

To meet the plausible objection that the slight contrast between two kinds of fruit paste might unduly facilitate a change of taste, we used with some children the combination of chocolate and guava fruit paste.

We verified later however that the differences of contrast between the foods we employed did not exert any influence on the results, as can be seen from the following table.

COMBINATION	CONTRAST	CHANGE OF TASTE: PERCENTAGE OF CHILDREN
Guava-banana	Slight	57.1
Peach-banana	Medium	62.5
Peach-chocolate	Marked	60.0

In order not to intimidate the child by separation from his companions we gave the whole situation the character of a dramatized play. He was told a story of little mice who liked to eat some nice sweets the cat had forgotten on a table behind the door. Only one little mouse could go at a time for otherwise the cat might come back when hearing the noise of so many little footsteps entering her house all at once. Later on in case of the experimental group we introduced a "big mouse" who by his brave example of choosing first encouraged his more timid little companion.

CLASSIFICATION OF THE CHILDREN ACCORDING TO THEIR
ORIGINAL TASTE

The isolated daily choices were continued until the child's own taste was clearly defined. As a result of these studies the children were divided into three groups according to the nature of their original taste.

Group 1—*Original taste: predominant preference.* Out of 100 children 54 favored one kind of food in 70 to 100 per cent of their choices. In this group the predominant preference was further characterized by the sure, unhesitant, decided manner of picking out the favorite bit of food.

Group 2—*Original taste: temporary preference.* In the preliminary classification we met with the following difficulty: 28 of the children would for days—sometimes weeks—in succession choose food *a*, and then for unknown reasons change to food *b*. It was necessary to eliminate carefully all these cases of temporary preference because they presented a modification similar in form to that which we desired to obtain by means of our experiment.

Group 3—*Original taste: indefinite.* Eighteen of the children showed no preferences whatsoever in regard to the two foods in question. Without stopping to observe, they would often, with an indifferent mien, take the *nearest*. By a daily variation of the position of the two bits of food the writer frequently obtained a regular alternation of choices (*ababab*).²

The division of the children into these three groups represents but a rough classification. In reality there exists between permanent preference, on the one hand, and complete indifference, on the other, a whole series of intermediary cases. Hence the difficulty of the preliminary observation, which we prolonged over three months. This work was recompensed, however, by the almost perfect constancy of our control groups lasting over a period of a whole year, giving us the assurance of the exactness of the experimental results.³

² In order to be sure that the regularity of choices in the other groups was not determined by proximity, we adopted the general rule of varying the location of the two bits of food according to the nature of the child's original taste. In case he showed a definite preference, his favorite bit was put farther away from him than the one he avoided.

³ Out of 120 children we lost 26 due to irregular school attendance and 28 due to temporary preference. Of the 66 left 33 had to be used for controls, hence the reduced number of our experimental groups.

To obtain a reliable starting-point for our experiment we decided to use only the children of predominant and those of indefinite taste. Although small, the latter group was of special interest to us because everyday experience shows that it is easier to establish new habits than to change the old. The results of the experiment later proved that this factor does indeed play an important role in the establishment of permanent preferences.

Furthermore, since Dr. Duncker had only studied cases of predominant preference, the investigation of the influence of social example on children showing no preference whatsoever represented a new contribution to the original question.

The children of predominant and indefinite taste were subdivided into initially equivalent experimental and control groups.

Besides organizing these groups, it was necessary to select the children whose influence upon their companions was to be observed. During several weeks the writer studied the social relations of the children in their free activities on the playground and in the classroom. These studies, supplemented by information gained from the teachers, resulted in the choice of leading individuals who showed a marked social ascendance over the children of the experimental group.

THE EXPERIMENTAL SITUATION

Before the experiment the writer isolated one of the leaders who had been taught to play the game of "Big Mouse and Little Mouse" and told him what *kind* of food he should take.

Duly instructed, the Big Mouse chose the food the Little Mouse had been avoiding or, in the case of children of indefinite taste, regularly took *one* kind of food.

At first the writer was afraid that this previous indication might spoil the experiment. The Big Mouse might tell the Little Mouse about it. Fortunately this never happened, perhaps for the following reason. From the standpoint of the leading child the plot of the story and the honor of being chosen to take the role of the Big Mouse was much more important than the, to him, rather insignificant fact of being told what to choose.

The experiment took place in the following way:

(The Little Mouse enters)

Big Mouse (greeting the Little Mouse): Good morning, let's play a nice game called Big Mouse and Little Mouse. I am the Big Mouse, you are the Little Mouse.

The Writer: Where are the two mice walking today?

Big Mouse: We are walking in the woods. Look at the big trees, the pretty little birds.⁴

The Writer: Where are you going?

Big Mouse: We are going to the house of the cat.

Big Mouse (to Little Mouse): Here is the house of the cat. Look at the nice food Little Mouse, don't be afraid of the silly cat. See how I eat her food.

(Big Mouse now slowly takes the previously indicated bit of food from one of the plates in such a way that Little Mouse is able to see clearly what *kind* of food he chooses.)

The Writer: Now, Little Mouse, don't be afraid; take a nice bit of food from this other little plate.

(The Little Mouse now makes the critical choice and leaves the room.)

Not only was the critical choice immediately recorded, but we also carefully observed the child's attitude towards the "leader," for we soon found out that an example as such does by no means always exert a modifying influence, much depending upon the general social relations between the two children and upon the "mood" of the particular situation.

THE RESULTS OBTAINED *during* THE EXPERIMENT

The choices immediately following the example of the leader not only represent a confirmation of Duncker's results, but a necessary process in the *fixation* of the new preferences. The newly acquired taste persisted *after* the elimination of the original social example only in the case of children who, *during* the experiment, were regularly susceptible to the influence of suggestion.

Hence we shall begin by analyzing the average results obtained *during* the experiment in Tables 1 and 2.

Each child submitted to the experiment had an originally equivalent companion in the control group.⁵ The children were matched not only according to the original distribution of choices; but we also tried in so far as possible to match experimental with *contemporary* control choices for the following reason. Uncontrollable factors such as a particularly exciting game may have the effect of causing instability in the choices of a certain day. These results cannot therefore be adequately related to observations made upon other occasions.

⁴ This part of the story varied from day to day. Sometimes the mice went to the circus, or took a bus-ride, instead of walking through the woods.

⁵ The children of Table 1 are controlled by the same number of initially equivalent individuals (cf. the last lines of the table).

TABLE 1
RESULTS OBTAINED DURING THE EXPERIMENT

EXPERIMENTAL GROUP		INITIAL TASTE: <i>Predominant</i>		
CHILDREN	INITIAL CLASSIFICATION		CHOICES DURING THE EXPERIMENT	
	PERCENTAGE <i>a</i>	PERCENTAGE <i>b</i>	PERCENTAGE <i>a</i>	PERCENTAGE <i>b</i>
B 1c	90	10	0	100
G 2c	100	0	20	80
G 3c	90	10	20	80
G 4c	90	10	20	80
B 5c	80	20	20	80
B 6c	70	30	20	80
B 7c	90	10	30	70
G 8c	80	20	40	60
G 9c	70	30	40	60
B 10c	70	30	50	50
G 11c	90	10	60	40
B 12c	100	0	70	30
G 13c	80	20	70	30
G 14c	100	0	80	20
B 15c	100	0	90	10
G 16c	100	0	90	10
G 17c	70	30	90	10
G 18c	70	30	90	10
G 19c	80	20	90	10
B 20c	100	0	100	0
G 21c	100	0	100	0
G 22c	100	0	100	0
Averages	87.3	12.7	58.6	41.4

CONTROL GROUP		INITIAL TASTE: <i>Predominant</i>		
Averages	89.6	10.4	84.6	15.4

Since the specific quality of the foods employed did not influence the results, we do not mention it in our tables. In the case of children of predominant taste the letter *a* indicates the original preference. In all the tables the letter *b* stands for the kind of food used for the experimental social example.

Tables 1 and 2 are divided into three columns. In the first the children are listed and numbered in order to facilitate reference. The second indicates the distribution of choices *preceding* the

experiment. Here the child's original taste is classified according to the last ten choices *before* he was submitted to the modifying social example. In the third column we recorded the percentages of foods *a* and *b* in the first ten choices *during* the experiment.

An increase in the number of *b* choices *during* the experiment may indicate a modification due (1) to the experimental factor, that is, the social prestige of the leading child or (2) to the influence of unknown causes, such as the home environment. This latter possibility represents a source of error, hence the necessity of a careful observation of the contemporary choices in the control groups.

No modification or an increase of *a* choices in children not submitted to the social example indicates an *absence* of factors acting in the *same direction* as the experiment. If, on the other hand, *b* choices increase in the control groups we must admit the presence of unknown causes producing effects similar to the experiment. Hence if the control groups vary it is highly probable that the initially equivalent experimental groups would vary in a similar manner under the same circumstances. We must therefore eliminate error by subtracting modifications in the control groups in favor of food *b* from the results obtained in the corresponding experimental groups.

In the first place we must subtract in Table 1 the *initial* average of food *b* from the result obtained *during* the experiment.

Average of <i>b</i> choices during the experiment.....	41.4 per cent
Initial average of <i>b</i> choices.....	12.7 per cent
Average variation of the experimental group.....	28.7 per cent

In a similar manner we obtain the average variation of the control group.

Average of contemporary control choices (food <i>b</i>).....	15.4 per cent
Initial average of <i>b</i> choices.....	10.4 per cent
Average variation of the control group.....	5.0 per cent

Since the increase of *b* choices in the control group signifies the interference of unknown factors, we subtract from the result obtained in the experimental group the modification of the control group.

Average modification of experimental group <i>during</i> the experiment	28.7 per cent
Average contemporary modification of control group.....	5.0 per cent
<i>Residual difference</i>	23.7 per cent

This net result or *residual difference of 23.7 per cent* represents the average modification obtained *during* the experiment with children of initially predominant preference.

Thirteen children of the control group remained perfectly true to their original preference, the other 9 showing only slight variations.

In the *experimental* group, on the other hand, 11 children modified their choices from 30 to 90 per cent in favor of the kind of food chosen by the leader in the experimental situation. Five children of the same group showed only slight variations, 3 were not in the least influenced, while the remaining 3 confirmed their original preference by increasing the number of choices in favor of food *a*. We may therefore state that in the experimental group of originally predominant preference one-half of the children were markedly influenced by the example of the leading child.

The experiment with children of *indefinite taste* clearly shows how much easier it is to form new habits than to change the old (Table 2).

TABLE 2

RESULTS OBTAINED DURING THE EXPERIMENT

EXPERIMENTAL GROUP			INITIAL TASTE: <i>Indefinite</i>	
CHILDREN	INITIAL CLASSIFICATION		CHOICES <i>during</i> THE EXPERIMENT	
	PERCENTAGE <i>a</i>	PERCENTAGE <i>b</i>	PERCENTAGE <i>a</i>	PERCENTAGE <i>b</i>
B 23c	50	50	0	100
B 24c	60	40	10	90
G 25c	50	50	10	90
B 26c	60	40	10	90
G 27c	50	50	10	90
G 28c	50	50	20	80
B 29c	50	50	20	80
Averages	52.9	47.1	11.4	88.6
CONTROL GROUP			INITIAL TASTE: <i>Indefinite</i>	
Averages	51.4	48.6	42.9	57.1

Computing the results by the method described above we find:

Average variation of experimental group.....	41.5 per cent
Average variation of control group	8.5 per cent
<i>Residual difference</i>	33.0 per cent

Not only does the residual difference of 33 per cent exceed the result obtained in the group of initially predominant taste (23.7 per cent), but *all* children of the experimental group readily followed the leader; that is, in 100 per cent of the cases a dominant preference took the place of the initial indifference.

This confirmation of Duncker's results does by no means guarantee the indefinite *endurance* of changes in favor of food *b*, after the elimination of the social example. Since the purpose of our experiment was to answer this particular question we tried to find out under what conditions *enduring* results could be obtained.

THE FORMATION OF ENDURING PREFERENCES

After a child had followed the leader in choosing food *b* for several days in succession we began testing the *endurance* of the results by means of *occasional* isolated choices. In case of regression to the original preference, we continued to submit him to the modifying social influence. However, if these tests consistently showed that the new preference *endured in the absence of the originating social cause* we eliminated the example of the leader altogether and submitted the child to a series of isolated choices which took place once a day two to three times a week.

We shall begin by analyzing the first four isolated choices in a group of children of originally predominant taste. In all these cases we adopted the measure of computing the distribution of foods *a* and *b* in the last four choices before and the first four choices after the social influence had been introduced in the experimental group and controlled the results with the same number of contemporary choices of the control group.

When the preferences at the time immediately before the social influence and those at the time immediately after this influence were thus compared, the experimental group showed an average shift of 51.6 per cent in favor of food *b*, while in the control group there was on the average no shift at all. For more than 50 per cent of the individuals in the experimental group the variation was conspicuous.

How Long Do These After-Effects Endure? To answer this question we continued the tests of these "modified" children in isolated choices during four to seven weeks in the year 1937. Com-

paring the average variations in the total number of choices of this final examination we obtain the following results:

Originally predominant taste (Table 3)

Average variation food *b*

Experimental group	65.6 per cent
Control group	~.3 per cent
<i>Residual difference</i>	65.9 per cent

Originally indefinite taste (Table 4)

Average variation food *b*

Experimental group	23.5 per cent
Control group	5.4 per cent
<i>Residual difference</i>	18.1 per cent

The residual differences of 65.9 per cent in the originally predominant group and of 18.1 per cent in the originally indefinite group clearly indicate the existence of after-effects in the total number of crucial choices in the year 1937.

We do not wish to deny that these after-effects gradually weaken. To be sure, most children both in the group with originally predominant taste preference and in that with originally indefinite taste clearly showed the after-effects during the first four weeks following the experiment. Beginning with the fifth week, however, the choices of several children seemed to indicate a decrease in the after-effects. We do not know whether this fact should be attributed to a reversion to the original preference or to the excitement of the end of school with its altered schedule and its long periods of rehearsals.

The reexamination of 20 children one year later brought us a definite answer to the question of *enduring preferences*. These tests which followed a long interval without experimental or isolated choices were made with all possible precautions to eliminate the influence of extraneous factors. We chose a period during which the regular course of kindergarten activities was not altered by exciting events, and were very careful in the presentation of the foods. We systematically located the *b* food farther away from the child than food *a*.

On the first day after the interval of one year we let the children

take both kinds of food to remind them what they tasted like. On all following occasions they were allowed to take but one piece.

Comparing *averages*, we obtain the following variations for the year 1938:

Originally indefinite taste (Table 5)

A. Experimental group

Isolated choices 1938.....	81.7 per cent
Initial classification 1937.....	45.8 per cent
Average variation 1938.....	35.9 per cent

TABLE 3

AFTER-EFFECTS

Total number of choices 1937

EXPERIMENTAL GROUP					INITIAL TASTE: <i>Predominant</i>						
CHILDREN	INITIAL CLASSIFICATION					CHOICES AFTER THE EXPERIMENT					
	NUMBER		SUM	PERCENTAGES		NUMBER		SUM	PERCENTAGES		
	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>	
B 10c	12	3	15	80.0	20.0	6	9	15	40.0	60.0	
B 5c	16	2	18	88.9	11.1	5	13	18	27.8	72.2	
G 2c	10	0	10	100.0	0.0	2	10	12	16.7	83.3	
G 8c	9	2	11	81.8	18.2	1	11	12	8.3	91.7	
G 30c	5	0	5	100.0	0.0	0	5	5	0.0	100.0	
G 3c	6	1	7	85.7	14.3	2	5	7	28.6	71.4	
G 9c	6	2	8	75.0	25.0	0	8	8	0.0	100.0	
B 7c	6	1	7	85.7	14.3	6	1	7	85.7	14.3	
B 1c	5	0	5	100.0	0.0	0	5	5	0.0	100.0	
Averages				88.6	11.4				23.0	77.0	
Total	75	11	86	87.0	13.0	22	67	89	25.0	75.0	

CONTROL GROUP					INITIAL TASTE: <i>Predominant</i>					
Averages				88.6	11.4				88.9	11.1
Total	76	14	90	84.4	15.6	78	11	89	87.6	12.4

B. Control group

Control choices 1938	50.0 per cent
Initial classification 1937.....	45.8 per cent
Average variation 1938	4.2 per cent

C. Average variations

Experimental group 1938	35.9 per cent
Control group 1938	4.2 per cent
<i>Residual difference</i>	31.7 per cent

TABLE 4

AFTER-EFFECTS

Total number of choices 1937

EXPERIMENTAL GROUP						INITIAL TASTE: <i>Indefinite</i>					
CHILDREN	INITIAL CLASSIFICATION					CHOICES AFTER THE EXPERIMENT					
	NUMBER		SUM	PERCENTAGES		NUMBER		SUM	PERCENTAGES		
	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>	
B 29c	8	8	16	50	50	6	11	17	35.3	64.7	
B 23c	6	6	12	50	50	5	7	12	41.6	58.4	
B 26c	6	4	10	60	40	4	12	16	25.0	75.0	
G 27c	5	5	10	50	50	3	7	10	30.0	70.0	
G 28c	4	4	8	50	50	1	7	8	12.5	87.5	
B 24c	3	3	6	50	50	1	3	4	25.0	75.0	
Averages				51.7	48.3				28.2	71.8	
Total	32	30	62	51.6	48.4	20	47	67	30.0	70.0	

CONTROL GROUP						INITIAL TASTE: <i>Indefinite</i>					
Averages				50	50				44.6	55.4	
Total	28	28	56	50	50	34	41	75	45.3	54.7	

Originally predominant taste (Table 6)*A. Experimental group*

Isolated choices 1938	25.0 per cent
Initial classification 1937	23.3 per cent
Average variation 1938	1.7 per cent

B. Control group

Control choices 1938	8.9 per cent
Initial classification 1937	12.2 per cent
Average variation 1938	-3.3 per cent

C. Average variations

Experimental group 1938	1.7 per cent
Control group 1938	-3.3 per cent
<i>Residual difference</i>	5.0 per cent

TABLE 5

AFTER-EFFECTS

Total number of choices 1938

EXPERIMENTAL GROUP					INITIAL TASTE: <i>Indefinite</i>					
CHILDREN	1937 INITIAL CLASSIFICATION					1938 CHOICES AFTER THE EXPERIMENT				
	NUMBER		SUM	PERCENTAGES		NUMBER		SUM	PERCENTAGES	
	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>
B 29e	3	3	6	50.0	50.0	0	4	4	0.0	100.0
G 28e	3	3	6	50.0	50.0	1	4	5	20.0	80.0
B 23e	3	3	6	50.0	50.0	1	4	5	20.0	80.0
G 27e	4	2	6	66.7	33.3	2	4	6	33.3	66.7
Averages				54.2	45.8				18.3	81.7
Total	13	11	24	54.2	45.8	4	16	20	20.0	80.0

CONTROL GROUP					INITIAL TASTE: <i>Indefinite</i>					
Averages				54.2	45.8				50.0	50.0
Total	12	10	22	54.5	45.5	21	11	22	50.0	50.0

TABLE 6
AFTER-EFFECTS
Total number of choices 1938

EXPERIMENTAL GROUP				INITIAL TASTE. <i>Predominant</i>						
CHILDREN	1937 INITIAL CLASSIFICATION					1938 CHOICES AFTER THE EXPERIMENT				
	NUMBER		SUM	PERCENTAGES		NUMBER		SUM	PERCENTAGES	
	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>
B 10c	4	2	6	66.7	33.3	0	5	5	0.0	100.0
G 9c	4	2	6	66.7	33.3	5	1	6	83.3	16.7
B 5c	5	1	6	83.3	16.7	5	1	6	83.3	16.7
B 7c	5	1	6	83.3	16.7	5	1	6	83.3	16.7
G 8c	4	1	5	80.0	20.0	5	0	5	100.0	0.0
G 3c	4	1	5	80.0	20.0	5	0	5	100.0	0.0
Averages				76.7	23.2				75.0	25.0
Total	26	8	34	76.5	23.5	25	8	33	75.8	24.2

CONTROL GROUP				INITIAL TASTE: <i>Predominant</i>						
Averages				87.8	12.2				91.1	8.9
Total	30	4	34	88.2	11.8	30	3	33	90.9	9.1

Analyzing individual cases we find that the *after-effect* of the experiment clearly *persisted* in all children of *originally indefinite taste* (Table 5). On the other hand, however, five out of six children of *originally predominant taste* show a decided *reversion* to their initial preference. Only one child of this group, B-10c, preserved the modification he acquired during the experimental situation.

CONCLUSIONS

We will begin by analyzing the influence of *non-experimental* factors.

1. The results obtained after the interval of one year lead us to the conclusion that the endurance of after-effects largely depends

upon the *child's original taste*. In children of the *indefinite* group the experiment produced *enduring* after-effects. It is significant that the same individuals had followed the leader *during* the experiment without hesitation—one might almost say without thinking—positive results being obtained with but slight social contact.

In order to obtain positive modifications in the group of originally *predominant* preference it was necessary to "woo" the child much longer and to establish a "deeper" social contact than in the case of children of indefinite taste. Accordingly, the after-effects of the predominant group were decidedly on the wane towards the end of 1937, and had with but one exception entirely disappeared after the period of one year.

In some cases we traced the reversion to the original preference to the habit of eating food *a* at home. In this case *domestic influence* counteracted the result of the experiment. One little boy, for instance, had an uncle who particularly liked food *a*, taking pleasure in giving it to the child.

2. Of particular interest, of course, are the experimental *social* conditions which cause the appearance of after-effects.

Most children who developed a new decided preference *regularly following* the example of their leader maintained this recently acquired taste after the elimination of the originating social cause. On the other hand *new variations* in favor of food *b* did in *no* case appear *after* the elimination of the leading example. These facts lead to the conclusion that the *absence* or *duration* of after-effects largely depends upon the social conditions *during* the experiment.

We will therefore analyze the social aspects of the experiment and add some new contributions to the original question studied by Duncker. Since Duncker in a previous analysis had already shown the importance of relative age, we concentrated our study on the effect of *repetition* and the *type of leadership*.

The fixation of the new taste by the repetition of socially influenced choices *during* the experiment has no doubt an important bearing on the *endurance* of *after-effects*. A long, straight series of *b* choices had to be obtained during the experiment before the occasional isolated tests *consistently* showed the *endurance* of the results in the *absence* of the originating social influence. For instance, B 32c:

INITIAL CLASSIFICATION			EXPERIMENTAL CHOICES			AFTER-EFFECTS		
CHOICES	PERCENTAGES		CHOICES	PERCENTAGES		CHOICES	PERCENTAGES	
	<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>		<i>a</i>	<i>b</i>
5	100	0	5	0	100	5	60	40

In spite of the fact that this boy had followed the leader in five choices without resisting a single time, the newly acquired taste was not as yet firmly established as the isolated choices following the experiment show.

In children who from the very beginning yielded to the influence of the leading example repetition tended to give stability to the experimental modification. When such children—with predominant taste—were given 20 experimental repetitions they followed the leader more completely in the last 10 instances than they did in the first 10.

However, the mere repetition of a leading example does by no means always develop new preferences. In some children—also with predominant taste—the last 10 choices in an experimental series of 20 repetitions showed a tendency to return to the old preference rather than an increased effect of suggestion.

To explain this difference we made a careful study of the personalities of our leaders. In the following sketches we will show how the effectiveness of an example largely depends upon the type of social ascendancy.

Affectionate leadership

Kindness towards others characterizes the personality of GIL. Quietly and gently she is always helping someone. The smaller the child the greater her solicitude. She gladly shares with the little ones her pieces of candy and knows how to take care of them.

Though thoughtful beyond her age, she delights in things a child loves. She likes the see-saw herself and is good at playing house and telling stories.

In the role of Big Mouse she makes the younger child feel at home by saying a kind word before she gaily invites him to eat the cat's food. GIL knows how to win the confidence of her little companions with quiet unobtrusive affection.

Amusing leadership

His vivid imagination and witty remarks make B7L, a lively five-year-old boy, one of the most popular children of his class.

B7L is our star actor in playing Big Mouse. He can always think of some new way to go to the cat's house. Sometimes he takes the Little Mouse on an imaginary ride by bus or train, upon other occasions they walk through the woods. B7L always makes funny remarks about what they "see" on their way, and can give dramatic zest to the final scene in which the two little mice play a trick on the cat by eating her food. The Little Mice look up to him and follow his example.

Despotic leadership

A small round table and a few chairs are the children's delight in playing house, but G10L considers the furniture her own, letting only certain children make use of it.

Over her group G10L rules with an iron hand. G2re, a little girl of retarded mental development, is particularly obedient, as the following observation shows.

Upon entering the classroom G10L snatches a doll from G2re's hand. The little victim does not protest. Without waiting for a command she humbly gives to her leader the doll's little hat and bag.

After having watched G10L's absolute rule we used her as leader in our experiment. To our surprise, the children but rarely followed her example. For instance, the timid little girl of the above-described scene did *not* imitate G10L a single time in 10 experimental choices.

In the list on page 465 we grouped the cases in accordance with the type of leadership to which the children were submitted.

These cases show that positive results were obtained in 90.1 per cent of the cases in which the leader by affection or amusing superior ability knew how to create an agreeable social atmosphere. On the other hand leaders whose ascendancy was based on force or impertinent teasing failed in producing modifications in 87.5 per cent of the cases.

Adler's school of psychology would interpret the negative results as compensating reactions of inferiority feelings. One positive case could possibly be traced to this origin. Cautious distrust in observing the leader's choice seemed to indicate in this child a fear of losing out if he did not take the same kind of food. But it is no exaggeration to affirm that this cautious attitude can be objectively distinguished from the interested joyful expression of a child who identifies himself with the situation.

As far as we can see Individual Psychology does not do justice to the *positive aspect* of social influence. In this respect it is interesting to notice that we obtained not only four negative but also four positive results with the example of older brothers and sisters.

Here as elsewhere success or failure largely depended on the

personality of the leader. In the case of B 12c we could see that the child was irritated by the presence of his older sister (G 11L), a lively girl who took pleasure in teasing others. On the other hand the leading sisters who modified cases G 2c and B 29c were good-natured, gentle, and kind.

Experimental studies in "helpfulness" which the writer is carrying out in the kindergarten of the Instituto de Educação, Rio de

TYPE OF LEADERSHIP	RESULTS <i>during</i> THE EXPERIMENT	
	POSITIVE CASES	NEGATIVE CASES
I. Socially agreeable leaders characterized by		
A. Kindness		
G 1L	7	
G 2L	3	
G 3L	1	
G 4L	1	
G 5L	1	
G 6L		1
B. Vivid imagination		
B 7L	4	
B 8L	1	
G 9L	2	1
<i>Total agreeable leaders</i>	20	2
II. Socially domineering leaders characterized by		
A. Overbearance		
G 10L		2
G 11L		1
B. Inconsiderate vanity		
G 12L		1
G 13L	1	1
B 14L		2
<i>Total socially domineering leaders</i>	1	7
III. Character of leaders not clearly defined		
B 15L		1
G 16L	1	
B 17L	1	
B 18L		1
<i>Total not clearly defined</i>	2	2

Janeiro, show that brothers and sisters are by no means always rivals. Among them we have often observed cooperation, and sometimes genuine kindness.

In many cases not only kindness but a personal relation of friendship between the two children is necessary in order to obtain positive results.

Especially interesting is the case of B 7e. Under the spell of his friend's immediate presence, B 7e changed his preference from food *a* to food *b*. But when, in the absence of his amusing friend, we submitted him to the example of G 1L he immediately reverted to his original taste, in spite of the new leader's kindness.

On the other hand, in the case of G 21e, a girl who had resisted the social example during three months in 33 experimental choices, the writer herself took pains to win the child's sympathy and affection. This effort resulted not only in two consecutive positive results during the experiment, but in two positive after-effect choices.

These facts show the personal nature of social influence. Of importance is not only the character of the leader, but his personal relation with the particular child. Following or resisting the example of a leader is by no means an isolated reaction. To understand a child's behavior in a given situation we must view it as an integral part of a whole trend of social relations.

A general instinct of imitation does not exist; on the contrary, our experiment proves that a positive social influence largely depends upon the specific process of gaining a child's confidence and admiration.

Since at the beginning of the experiment we were not aware that the type of leadership would play so important a role, it happened that four girls and only one boy were submitted to the example of domineering predecessors. Hence the apparently greater resistance of the girls to social influence, as can be seen from the following results obtained *during* the experiment:

TOTAL NUMBER OF	MODIFIED INDIVIDUALS	RESISTANT INDIVIDUALS
Boys	71.4 per cent	28.6 per cent
Girls	55.6 per cent	44.4 per cent
Averages	63.5 per cent	36.5 per cent

If by eliminating three resistant girls we equalize the groups as to the type of leadership, we find no significant difference between the sexes as the following percentages show:

Individuals influenced *during* the experiment

Boys	71.4 per cent
Girls	66.7 per cent
Average.....	69.2 per cent

SUMMARY

In view of these facts we may conclude that the appearance of after-effects largely *depends upon*:

I. *The child's original taste*

A. Children of originally *predominant* taste

1. Out of 22 children 50 per cent were modified *during* the experiment.
2. After-effects were observed
 - a. In 7 out of 15 children (48.9 per cent), in the first four choices after the experiment.
 - b. One child out of six (16.7 per cent) showed after-effects one year afterwards.

B. Children of originally *indefinite* taste

1. One hundred per cent were modified *during* the experiment.
2. All of four individuals reexamined after a year's interval still showed the experimental modification.

II. *The results obtained during the experiment*

A. Lasting after-effects were obtained only in case the child had been regularly influenced in a straight series of experimental choices.

B. The effectiveness of repetition does in its turn largely depend upon the social relations between the leaders and the children submitted to their example:

1. Consistent positive results were obtained only in case the leader was socially agreeable.
2. No appreciable results appeared in the case of domineering leadership.

The sure unhesitant manner of choosing the food according to the newly acquired preference over a long period of time, in the absence of immediate social influence, leads us to answer in the affirmative the initial question: As a whole our results warrant the conclusion that, under the above described specific conditions, *the example of a leader causes lasting modifications of the child's original taste.*

THE WORDING OF QUESTIONS IN PUBLIC OPINION POLLS

BY DONALD RUGG AND HADLEY CANTRIL

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At least three major variables affect the results obtained on a public opinion poll: the person interviewed, the interview itself, and the way in which the issues on the ballot are posed. More specifically, the validity of any poll must be considered with reference to (1) the adequacy of the sample population—is it a representative cross-section of the particular universe being sampled? (2) the effects of the interviewers' "personal equations" upon the responses they obtain—do they achieve proper rapport with the respondents, do they "force" answers, to what extent do their own opinions influence the results they get? (3) the influence of the question form on the resulting answers.

The research emphasis of the leading polls to date has centered on the development of accurate sampling procedures. The creditable performance of these polls in predicting the outcome of the 1940 election indicates that the problems of sampling are now fairly well in hand¹ in so far as straight national coverage on political issues is concerned, although many short cuts and refinements are possible.

Problems raised in connection with the interview itself have not as yet received the systematic attention given the problems of sampling. However, intensive research in this area is now under way on several fronts with the dual purpose of improving interviewing technique and studying the effect of the interviewer's own attitudes and socio-economic status upon the results he obtains.

Problems involved in the framing of questions are by no means solved or even, perhaps, fully understood. It must be remembered that the whole field of public opinion measurement is in its most infant stages. And even though poll administrators have been well aware of the importance of question wording and have taken great pains to keep questions reasonably objective and free from at least

¹ Cf. Katz, Daniel. The public opinion polls and the 1940 election. *Pub. Opinion Quart.*, 1941, 5, 52-78.

the more obvious types of bias, still there has been no evaluation of the information so far gathered on the effect of wording variations.

It was the clear recognition of the importance of wording which resulted in the inauguration of the split-ballot technique by the American Institute of Public Opinion over three years ago and its consistent use ever since. The same method is used often by the *Fortune* poll. The "split-ballot" technique consists of preparing each questionnaire in two alternative forms, each form being submitted to comparable cross-sections of the population. Some of the questions are varied on the two forms to test the effect of wording differences or various ways of presenting issues, other questions are the same on each form and serve as controls.

Because of the absence of any objective criteria of validity, a word must be said about the difficulty of evaluating alternative presentations of issues. It can easily be shown that two different phrasings of an issue yield different response distributions, but there is seldom any way of determining which presentation is the more valid, that is, which provides the more accurate index of the actual state of opinion on the issue. In most cases, evaluations of the relative merits of different presentations of an issue must rest on a priori considerations rather than upon more precise experimental evidence. Elections provide the most convincing means of validation. But conclusions from election predictions cannot be uncritically applied to other types of issues.

PREVIOUS STUDIES

One of the most complete and carefully controlled studies of question wording is that of Blankenship, who made a local survey in a New Jersey community just previous to a state election held to determine whether the constitution should be amended to permit horse-racing and parimutuel betting.² Questions were presented to comparable populations in various forms which were combinations of "objective" vs. "subjective" presentation and "positive" vs. "negative" presentation. The objective form of the question gave the best prediction, although the author points out that it is dangerous to generalize these results beyond the data on which they were based.

Menefee³ has shown that significantly fewer propositions were

² Blankenship, A. B. Influence of the question form on response in a public opinion poll. *Psychol. Rev.*, 1940, 3, 345-403.

³ Menefee, S. C. The effect of stereotyped words on political judgments. *Amer. sociol. Rev.*, 1936, 1, 614-621.

accepted by his subjects when these statements were labeled as representing "communist," "fascist," or "radical" viewpoints than when the propositions were presented in unlabeled form. Although this study demonstrates the prejudicial effect of introducing emotionally toned stereotypes, it should not be concluded that the polls must always avoid such stereotypes. Many issues cannot realistically be divorced from a context of stereotypes and labels which they inevitably acquire.⁴

Studenski⁵ has criticized the use by polls of the phrase "government spending" because it tends to behave as a stereotype, having taken on a derogatory connotation for a majority of the populace. When the question is presented in a general way, the great majority favor decreased government spending, but when people are quizzed on specific types of spending—for relief, social security, farm program, etc.—many will endorse the present rate of spending or an even higher one for certain budgetary items. It is true that the polls have many times been guilty of presenting complicated issues in an oversimplified form, but on the other hand people are continually being confronted with such oversimplifications in everyday discussions and political campaigns. Granted that it is all too easy to present the results of an oversimplified question so as to suggest quite misleading implications, such results may provide, for the cautious observer, a valuable insight into the processes of popular reaction to symbols and propaganda.

An example of the way in which answers may be forced into the response categories provided is shown in a study by Jenkins,⁶ who asked a group of college students to enumerate the chief advantages and disadvantages of fraternity life. From the results of this free-answer question, a multiple-choice form was prepared containing the fifteen most frequently mentioned reasons. The multiple-choice question was given another group and the results were the same as with the free-answer form. On a third form, also multiple-choice, the five most frequently mentioned reasons were omitted, but blank spaces were provided and respondents were urged to fill in any answers they desired. In spite of this, the

⁴ Cantril, H. Experiments in the wording of questions. *Pub. Opinion Quart.*, 1940, 4, 330-332. Luric, W. A. The measurement of prestige and prestige suggestibility. *J. soc. Psychol.*, 1938, 9, 219-225. Roslow, S., Wulfeck, W. H., & Corby, P. G. Consumer and opinion research: experimental studies on the form of the question. *J. appl. Psychol.*, 1940, 24, 334.

⁵ Studenski, P. How polls can mislead. *Harpers*, 1939 (Dec.), 180, 80-83.

⁶ Jenkins, J. G. *Psychology in business and industry*. New York: Wiley, 1935.

five reasons which had been most frequently mentioned on the second form were given much less frequently when they did not appear as part of a printed list.

With the wealth of data now available from public opinion polls based on representative samples of the voting population, the study of the wording of questions can begin to take on new dimensions. Poll administrators have faced the problem of wording as practical men charged with the self-imposed business responsibility to report public opinion honestly and faithfully. Hence they have frequently asked themselves, "How is the vote on this issue changed if we vary the wording?" But it must be remembered that public opinion data were in most cases not gathered by poll administrators with any systematic problem in mind. The result is that data are scattered and often inconclusive in so far as generalization is concerned.

Therefore, the major task confronting anyone who plunges into the poll data already accumulated is the more or less systematic ordering of the material. The data are brought together here not because they provide any final answers but because they point to problems which must be squarely faced by technicians and because they do add to the material from which social psychology must be built.

RESULTS

The data have been grouped together around the following problems:

- Effects of context
 - Contingencies
 - Placement on ballot
- The alternatives presented
 - Dichotomous vs. multiple choice
 - Order of alternatives
 - Explicit vs. implicit alternatives
 - Free answers
- Deviations from "objective" wordings
 - Prestige
 - Stereotypes
 - Proposed legal changes
 - Biased wordings
 - Personalization of the question

Effects of Context

Contingencies. If one wants to measure some very general attitude, he immediately wonders how he can most accurately pose the issue involved. Suppose one wanted to measure "interven-

tionism" in the United States before December 7, 1941. Shall he simply ask whether the United States should declare war, shall he poll on some of the numerous specific proposals (e.g., convoys) advanced by interventionist leaders, or shall he try to devise some multiple-choice type of question which will attempt to measure gradations of interventionist sentiment? It is obvious that there exists no single index of "interventionism." The amount of interventionist sentiment found is a function of the particular issue used, of the wording of this issue, and of the general context in which it appears. Table 1 illustrates this variability in interventionist senti-

TABLE 1

		PERCENTAGE "INTERVENTIONIST" SENTIMENT
1	So far as you, personally, are concerned, do you think the United States has gone too far in helping Britain, or not far enough? (AIPO 6/24/41)	78
	Too far 15 per cent About right 46 per cent	
	Not far enough 32 per cent No opinion 7 per cent	
2	Some people say that if the United States goes on helping England, Germany may start a war against our country. Do you think we should continue to help England, even if we run this risk? (AIPO 5/6/41)	76
	Yes 76 per cent No 21 per cent No opinion 3 per cent	
3	So far as you, personally, are concerned, do you think President Roosevelt has gone too far in his policies of helping Britain, or not far enough? (AIPO 6/24/41)	74
	Too far 20 per cent About right 57 per cent	
	Not far enough 17 per cent No opinion 6 per cent	
4	If it appears certain to you that Britain will be defeated unless we use part of our navy to protect ships going to Britain, would you favor, or oppose, such convoys? (AIPO 5/6/41)	73
	Favor 73 per cent Oppose 23 per cent No opinion 4 per cent	
5	Which of these two things do you think is more important for the United States to try to do— (OPOR 5/29/41)	
	To keep out of war ourselves or 39 per cent	58
	To help England win, even at the risk of getting into the war? 58 per cent	
	No choice 3 per cent	
6	Do you think the United States Navy should be used to convoy (guard) ships carrying war materials to Britain (AIPO 6/24/41)	56
	Yes 56 per cent No 35 per cent No opinion 9 per cent	
7	If Roosevelt and our leading military experts say that Britain will be defeated unless we go into the war in the near future, would you favor, or oppose, going into the war within a few days? (AIPO 5/20/41)	51
	Favor 51 per cent Oppose 41 per cent Don't know 8 per cent	

TABLE 1—Continued

		PERCENTAGE "INTERVENTIONIST" SENTIMENT
8	If you were asked to vote today on the question of the United States entering the war now against Germany and Italy how would you vote—to go into the war now, or to stay out of the war? (AIPO 9/9/41)	26
	Go in 26 per cent Stay out 69 per cent No opinion 5 per cent	
9	Should the United States enter the war now? (OPOR 9/17/41)	17
	Yes 17 per cent No 76 per cent No opinion 7 per cent	
10	Should the United States go into the war now and send an army to Europe? (AIPO 9/17/41)	8
	Yes 8 per cent No 88 per cent No opinion 4 per cent	

ment. It is based on the results of five American Institute of Public Opinion (AIPO) and Office of Public Opinion Research (OPOR) surveys, conducted during May, June, and September of 1941.⁷ Since all the questions were not polled simultaneously, there may be some slight effect of the time element, but this would not be sufficient to obscure the general pattern of differences.

Questions 1 and 3 demonstrate the tendency for replies to pile up on the "about right" alternative when a middle ground is offered. They also show that when people can identify themselves with the policies of the "United States" rather than "President Roosevelt" they are likely to be more interventionist.

The second question presents the issue of aid to Britain as a challenge, and it is not surprising that a very large majority favor continued aid to Britain in this particular context. It is doubtful whether the fourth question measured *current* interventionist sentiment, since it is probable that some of those voting "favor" on this question did not believe a British defeat was at that time inevitable without our help. However, the question does indicate the strong support of convoys under the condition of a British defeat. The fifth question, in which the alternatives are clearly set

⁷ The questions which provide the data of this study appeared on surveys made by the American Institute of Public Opinion and by the Office of Public Opinion Research. In the following tables, Institute questions will be labeled "AIPO", Office of Public Opinion Research questions "OPOR". The surveys conducted by both organizations use the method of stratified sampling, various population groups being represented in the poll sample in the same proportions that they occur in the total voting population. Dates are given for each question or set of questions. They indicate the day on which this question was sent out to the interviewers. The opinion represented would be that which was current during the following week to ten days, by which time the interviewing would have been completed. On split-ballot comparisons, a difference of 5 per cent is necessary for statistical significance. The two forms of a split ballot are sent out simultaneously.

against each other, reduces the interventionist vote considerably. The sixth question shows a majority in favor of convoys, although fewer favor them in this context than when a British defeat is predicated upon their absence. Question 7 shows a much larger number of adherents to a policy of direct military intervention than do the related questions 8, 9, and 10. This is probably due to the fact that the question is a conditional one, and secondarily to the presence of a prestige element. The difference between questions 8 and 9 shows more people in favor of military intervention if they can personally participate in the decision to declare war. Question 10 demonstrates the prejudicial effect of the phrase "send an army."

The data in this table clearly show the danger of interpreting any general opinion on the basis of less than a pattern of questions which place that opinion squarely in a number of contexts and surround it with varying contingencies just as it usually is in everyday life.

Placement on Ballot. In constructing a ballot, care must be taken to place the questions in such a way that the answers to one question do not unduly influence the answers to succeeding questions. An example of the effect of placement is the following: "Does it seem to you that the United States is already in the war?" On the B form, this question was the first one on the ballot. On the A form, it was sixth, preceded by questions on sending war planes to Britain and changing the Johnson Act so England could borrow money from us. Both of these measures probably suggested that the United States was still not actually in the war, hence the lower "Yes" vote on the A form.

(AIPO 1/9/41)	<i>A form</i>	<i>B form</i>
Yes	44 per cent*	52 per cent
No	44	40
Undecided	12	8

Of course, one way to minimize the interaction of related questions is to place them as far apart as possible, in the hope that the intervening questions will prevent a carry-over effect. However, even with such wide spacing, interaction cannot always be prevented, as the next set of questions indicates.

(*A form*—1st question on ballot) At present, men between the ages of 18 and 21 are not drafted. Do you think the law should be changed so that men between

the ages of 18 and 21 would be included in the draft, along with those from 21 to 35?

(*A form*—10th question on ballot) At present, men between the ages of 21 and 35 are being drafted. Should the law be changed so that only men between the ages of 18 and 23 would be included in the draft?

(On the *B form*, the same two questions were asked, but the order was reversed, that is, question 1 on the *A form* was question 10 on the *B form*, and question 10 on the *A form* was question 1 on the *B form*.)

(AIPO 4/25/41)

		<i>A form</i>	<i>B form</i>
(A-1)	Yes	53 per cent	48 per cent
(B-10)	No	42	46
	No opinion	5	6
(A-10)	Yes	25	41
(B-1)	No	69	51
	No opinion	6	8

The largest difference occurs on question A-10; B-1, which proposes to restrict the draft age to 18-23. People who had previously voted for inclusive 18-35 age limits on the *A form* were naturally less inclined to restrict it to 18-23 than were those who answered the 18-23 limit question first without having made any previous commitments. The obvious implication in this case is that questions as overlapping as these should not be asked on the same ballot.

It should not be concluded, of course, that the placement of a question *invariably* affects the response. Many negative instances could be cited, even of questions closely related in subject-matter.

The Alternatives Presented

Dichotomous vs. Multiple Choice. The *Fortune* Survey has shown a consistent preference for questions of the multiple-choice form, sometimes dubbed the "cafeteria" question, while the AIPO, although by no means neglecting cafeteria questions, has used preponderantly the direct "yes-no" question. Gallup has defended the "yes-no" question on the ground that this is the usual type of choice with which the man in the street is faced.⁸ He admits the usefulness of the multiple-choice question in fields where the choice of alternatives is not a dichotomous one, but insists that the "yes-no" question is more accurate where the issue is clear-cut and calls for unqualified acceptance or rejection. On the other hand, Roper reports that a four-part attitude scale toward the candidates gave a

⁸ Gallup, George. Question wording in public opinion polls. *Sociometry*, 1941, 3, 259-268.

better prediction of the 1940 election results than did the straight yes-or-no question "For whom do you expect to vote?"⁹

The relative merits of the multiple-choice and yes-no questions obviously cannot be decided categorically. Some comparisons of the two forms will show under what conditions one form is likely to be superior to the other. In May, 1941, the AIPO asked the following split-ballot questions with these results:

(*A form*) If you were asked to vote today on the question of the United States entering the war against Germany and Italy, how would you vote—to go into the war, or to stay out of the war?

Go in 29 per cent Stay out 66 per cent No opinion 5 per cent

(*B form*) Please tell me which of these policies you think the United States should follow at the present time. (Interviewer hands card to respondent containing the following statements.)

- | | |
|---|------------|
| A. Go to war at once against Germany and Italy..... | 6 per cent |
| B. Supply Britain with all war materials we can and also use our navy to convoy ships carrying these materials to Britain.. | 36 |
| • C. Supply Britain with all war materials we can, but do <i>not</i> use our navy to convoy these materials..... | 46 |
| D. Stop all further aid to Britain..... | 7 |
| Other replies | 1 |
| No opinion | 4 |

It is quite apparent that when a more moderate course was offered, fewer people favored a policy of direct military intervention. Where several distinct alternatives existed with regard to intervention, the B form undoubtedly provided a more realistic presentation of the problem. But if an actual war referendum were to be held the B form would tend to underestimate the percentage of those voting for outright war.

The multiple-choice question is definitely superior in some cases because it provides for the expression of gradations of attitude, which are necessarily sacrificed in the yes-no type of question. However, there are some possible dangers in the use of the cafeteria question and certain cautions which must be exercised in using it. Gallup points out that a multiple-choice question may, by providing several qualified alternatives, enable respondents to avoid expressing an opinion on the main issue; also that in this situation there operates a human tendency to avoid extreme positions in favor of more moderate ones.¹⁰ If, however, an issue does contain several

⁹ Roper, E. Checks to increase polling accuracy. *Pub. Opinion Quart.*, 1941, 5, 87-90.

¹⁰ Cf. footnote 8.

genuine alternatives, there is very good reason to present these alternatives, not to force them into the framework of a yes-no form.

Once it is decided to put a certain issue in the multiple-choice form, care must be taken to choose realistic alternatives which have a minimum amount of overlapping. Also, objectivity should be sought by balancing the number of alternatives pro and con. An experiment conducted by the AIPO¹¹ neatly demonstrates how a preponderance of alternatives on one side or the other can bias the results obtained. On the A form of the ballot this question was used:

Please tell me which of these policies you think the United States should follow at the present time:

1. Go to war at once against Germany and Italy.
2. Supply Britain with all war materials we can send and also use our navy to convoy ships carrying these materials to Britain.
3. Supply Britain with all war materials we can, but do not use our navy to convoy these materials.
4. Return to our previous policy of supplying only those materials which Britain can pay cash for and come and get here.
5. Keep completely neutral by limiting our aid to Britain to foodstuffs and medical supplies.
6. Stop all further aid to Britain.

The alternatives offered on the B form were the following:

1. Go to war at once against Germany and Italy with our full military power.
2. Go to war but send only part of our navy and air force and no men of the U. S. army.
3. Supply Britain with all war materials we can and also use our navy to convoy ships carrying these materials to Britain.
4. Go to war but limit our action at this time to this hemisphere.
5. Supply Britain with all war materials we can, but do not use our navy to convoy these materials.
6. Stop all further aid to Britain.

The A form was made reasonably objective by including two degrees of interventionist position, one "borderline" (No. 3), and three graded alternatives on the isolationist side. Form B, on the other hand, was deliberately overweighted with interventionist alternatives (1, 2, 3, 4). The only statement on the isolationist side was an extreme one (6). The results on these alternate forms are shown in Table 2.

¹¹ This experiment was based on a sample taken only in a few cities, so the results, while valid for the split-ballot comparison, do not represent opinion in the country as a whole.

TABLE 2

<i>A form</i>			<i>B form</i>	
ALTERNATIVE No.	PERCENTAGE IN FAVOR	TYPE OF ALTERNATIVE	PERCENTAGE IN FAVOR	ALTERNATIVE No.
1	9	Interventionist	12	1
2	26	Interventionist	9	2
	} 35	Interventionist	22	3
		Interventionist	4	4
3	23	Borderline	36	5
4	13	Isolationist	} 7	
5	7	Isolationist		
6	4	Isolationist		7	6
	18	No opinion	10	

Where a genuine intermediate step exists, distortion inevitably results when answers are forced into a dichotomy. Whether a three- or a five-step scale should be used depends on the nature of the issue and the purposes of the inquiry.

In using a trichotomy of two extreme steps plus a middle-ground position, the problem arises as to whether the middle position ought to be stated in the question or whether it ought to be provided only in the answer boxes. Where opinion is well crystallized, it probably makes little difference which procedure is followed, as the following example shows.

(AIPO 12/13/39)

(*A form*) Do you think liquor regulations here are too strict, not strict enough, or about right?

Too strict 6 per cent Not strict enough 45 per cent About right 40 per cent
No opinion 9 per cent

(*B form*) Do you think liquor regulations here are too strict or not strict enough?

Too strict 7 per cent Not strict enough 47 per cent About right 37 per cent
No opinion 9 per cent

On any issue where opinion is not so well structured the insertion of the "about right" alternative in the question itself would draw more people to this position than if it were not thus directly suggested. Under these conditions it is debatable as to which form should be used. Providing a middle-ground position may allow people to avoid the issue; on the other hand, if there is a genuine middle alternative, it is desirable to make it clear that it exists and not partially rule it out by not including it in the question.

Order of Alternatives. In devising an objective type of question one is confronted with the problem of the placement of alternatives. For example, should the question read, "Do you think the United States will go into the war in Europe or do you think we will stay out of the war?" or should it be phrased, "Do you think the United States will stay out of the war in Europe or do you think we will go into the war?" On the surface, it would not appear that a minor variation of this sort should make much difference in the results. Yet there is evidence to show that when one of these alternatives is mentioned second it receives a few more votes than when it comes first. The differences are not great but appear consistently on repeated polls of the question.

Similarly, on the question:

"Which of these two statements do you think is closer to the truth?"

1. England is now fighting mainly to keep her power and wealth.
2. England is now fighting mainly to preserve democracy against the spread of dictatorship."

interchanging the position of the two alternatives shows that when either of the alternatives is mentioned second it polls correspondingly more votes than when it is first. It appears that there is a tendency for the respondent to select the last, more easily remembered alternative when the question is a fairly complicated one.

The positive evidence for the influence of position comes chiefly from the examples cited above. In a number of other cases interchanging the position of the alternatives failed to produce significant differences.

Although we cannot draw any hard and fast conclusions regarding the effect of position, certain safeguards ought to be observed. It has been shown previously that suggestibility is likely to be greatest in areas where opinion is relatively uncrystallized. When polling on issues in such areas it is particularly advisable to use split questions on which the position of the alternatives is interchanged. Similarly, on complicated questions, where the factor of recency may operate in favor of the second alternative, it is wise to provide a check in the form of a split question.

Explicit vs. Implicit Alternatives. A frequent problem in the formulation of dichotomous questions is whether or not to write out both alternatives or to state only one, letting the respondent

gather the second alternative by inference. There are so far insufficient data from which to generalize. In some instances it appears to make little difference whether or not both alternatives are explicitly stated; in other instances where people are likely to be suggestible a significant difference may be obtained. The following three questions illustrate the problem and typical results. In the first instance, a significant difference is obtained on a question which has concerned comparatively few people and on which opinion is relatively unstructured. The meaning of the second question is sufficiently vague to permit the explicit alternative to direct opinion to some degree. In the third case the issue was one which had long confronted nearly everyone, one on which opinion was solidly structured so that variation in wording produced a negligible difference.

(AIPO 8/26/41)

(*A form*) Do you think workers should have the right to elect a representative on the Board of Directors of the company they work for?

Yes 61 per cent No 23 per cent No opinion 16 per cent

(*B form*) Do you think workers should have the right to elect representatives on the Board of Directors of the company they work for, or should all the directors be elected by the owners of the company?

Workers should have the right to elect..... 53 per cent

All directors elected by owners..... 31

No opinion 16

(AIPO 2/3/42)

(*A form*) Do you think the United States is doing all it possibly can to win the war?

Yes 75 per cent No 21 per cent No opinion 4 per cent

(*B form*) Do you think the United States is doing all it possibly can to win the war, or do you think there is more this country could do to win?

Doing all it can 65 per cent Could do more 32 per cent No opinion 3 per cent

(AIPO 2/14/41)

(*A form*) Should the United States stop giving aid to Britain?

Yes 10 per cent No 87 per cent No opinion 3 per cent

(*B form*) Should the United States stop giving aid to Britain, or should we continue to help the British?

Stop helping 7 per cent Continue to help 89 per cent No opinion 4 per cent

Free Answer. We have so far considered the relative merits of the multiple-choice and dichotomous questions. One more type remains—the free answer, where no definite alternatives are set by

the question, and the respondent simply answers the question in his own words. For example, he may be asked (if a preceding question has established the fact that he thinks the United States will eventually enter the war), "About how soon do you think we will be in the war?" Replies to this question gave the following distribution:

(AIPO 4/6/41)

2 months or less	12 per cent
3 months	8
4 to 6 months.....	22
Later estimates	31
No opinion	27

A comparable group was confronted with the dichotomous question, "Do you think we will be in the war within two months?" The answers: Yes—25 per cent; No—46 per cent; Don't know—29 per cent. This split provides another illustration of suggestion. When opinion tends to be vague and unstructured on a difficult question like this, and when a definite answer is suggested, as in the second form, it obviously produces different results than when the free-answer situation prevails.

On January 16, 1942, a ballot of the Office of Public Opinion Research included on one form a rather elaborate filter question concerning the role of the United States in the post-war world and on the other form of the ballot included a free-answer question asking "When the war is over, what single step do you regard as most necessary for the peace of the world?" The filter question, together with the results, is:

Percentage of
National Totals*

Which of these two things do you think the United States should try to do when the war is over

Stay out of world affairs as much as we can.....	24
Take an active part in world affairs.....	72
Undecided	4

100

*These national percentages are cited only to give some reference point to the other percentages. Obviously they do not mean that only this percentage of people have this point of view since many who share these sentiments have already been filtered out.

(Asked of those who said U. S. should stay out of world affairs) Which of these statements comes closest to what you think we should do?

We should maintain a large armed force in <i>our own country</i> and have as little as possible to do with the rest of the world.....	36	9
We should maintain a large enough armed force to protect <i>North America</i> , including Canada and Mexico, but have little to do with the rest of the world.....	24	6
We should maintain a large enough armed force to protect both <i>North and South America</i> but have little to do with the rest of the world.....	34	8
No opinion	6	1
	<hr/> 100	<hr/> 24

(Asked of those who said U. S. should take an active part in world affairs) Which of these statements comes closest to what you think we should do?

We should do everything by ourselves that is necessary to protect our own national interests wherever they are..	33	24
The United States and the British Empire should combine as one powerful English speaking nation.....	14	10
The United States, the British Empire and other nations should join their people and resources into one big world organization	50	36
No opinion	3	2
	<hr/> 100	<hr/> 72

(Asked of those who said United States, the British Empire and other nations should join into world organization) Are there any countries that you think should be kept out of such an organization?

Yes.....	31	15
No.....	69	21
	<hr/> 100	<hr/> 36

If "Yes": Which countries should be kept out?

Germany	65 per cent†
Japan.....	61
Italy.....	40
Russia.....	9
Axis.....	23

When the answers to the free question are carefully studied to see how many people volunteer either of the first two alternatives provided in the filter question, it turns out that about 30 per cent

† These percentages will add to more than 100 per cent since people mentioned more than one country. They are, in each case, percentages of 15 per cent of the national cross-section.

give answers which state explicitly or implicitly that the United States should take an active part in world affairs, while about 8 per cent give answers which clearly indicate that this country should stay out of world affairs. Most of these who favored United States participation in post-war affairs made rather specific proposals of a political or economic nature while those whose answers can be classified on the "stay out" side give traditional isolationist arguments. It is significant to notice here that, in spite of the fact that slightly less than 40 per cent of the total population interviewed on the free-answer form gave answers that could be classified for comparison with the dichotomous question, the ratio of the answers that could be so classified is approximately the same as the ratio in favor of participation obtained on the dichotomous question.

On the free-answer form about 15 per cent of the people gave no answer at all or had no ideas in mind. Approximately 20 per cent forwarded a solution which could be classified as vindictive (repress all Germans, kill Hitler, take away German arms, etc.); slightly over 10 per cent gave vague negative solutions (do away with war, do away with isms, etc.); the rest of the answers being of a miscellaneous variety.

Although the free-answer question used here was not designed as specifically as it might have been for comparison with the filter question, it clearly shows the extent to which people's thoughts are unstructured with relation to the measures they would like to see carried out when the war is over. When asked to give their own suggestions unaided, many of them think not so much of a method whereby a goal can be implemented, but think more in terms of some specific goal itself—such as destroying the Nazi party, or wiping out dictatorships. It is obviously easier for most people to have some opinion on what ought to be done than it is to have an opinion on how this can be done when they are confronted with a problem as baffling and comprehensive as the ordering of the post-war world.

Deviations from "Objective" Wording

Prestige. All persons constructing ballots are cautioned not to warp answers by using symbols of prestige. Stagner¹² has been particularly critical of the polls for their use of prestige names.

¹² Stagner, R. A comparison of the Gallup and Fortune polls regarding American intervention policy. *Sociometry*, 1941, 3, 239-258.

Before we consider the problem of just how much difference prestige makes, the validity of the basic assumption that the use of prestige names is necessarily bad should be examined. For the academically inclined person taught to evaluate proposals purely on their intrinsic merit, the introduction of an extraneous standard of judgment, such as a prestige name, is prejudicial and therefore bad technique. However, unfortunate though it may be, the public as a whole does not react to issues in a detached scientific manner. Reaction to symbols, stereotypes, and prestige associations is part and parcel of the process of popular judgment. In many cases, then, an issue cannot be realistically divorced from the names of its sponsors or supporters, since it is presented to the public with a prestige context, as "the President's proposal," "Colonel Lindbergh's statement," or "Hitler's aim," and it is in such a context that people respond to it.

This, of course, does not mean that any issue must be presented, willy-nilly, with the name of its most prominent supporter attached to it. For one thing, many people may be unaware of such sponsorship, in which case the presence of such a name could be considered unfairly biasing. But on an issue such as the Lend-Lease Bill, whose sponsorship was certainly no secret, there seemed no good reason to avoid referring to it as "the President's Lend-Lease Bill."

Instead of placing an indiscriminate ban on the use of prestige names, it is better to determine whether any given issue can be more fairly and realistically presented with or without the attachment of a prominent supporter's name. When in doubt, the best procedure is to use a split ballot, with the name on one form and not on the other. Results of several such splits will be given and considered in relation to the whole problem of prestige.

The largest prestige effect resulting from the use of President Roosevelt's name occurred on the following questions.

(AIPO 6/24/41)

(A form) So far as you, personally, are concerned, do you think President Roosevelt has gone too far in his policies of helping Britain, or not far enough?

Too far	20 per cent
About right.....	57
Not far enough.....	17
No opinion	6

(B form) So far as you, personally, are concerned, do you think the United States has gone too far in helping Britain, or not far enough?

Too far	15 per cent
About right.....	46
Not far enough.....	32
No opinion	7

Here the largest difference is in the "not far enough" column, which is sharply decreased when the President's name is used. At the same time, more people endorse the "about right" position, and more are also inclined to think Roosevelt has gone too far than when the question is stated in terms of the "United States." On a subsequent repetition of this split these differences were greatly reduced, although the same pattern was evident. It may be, of course, that people differentiate between President Roosevelt's *policies* and what the "United States" has done in the way of helping Britain so that this split does not necessarily constitute merely a test of prestige.

In only one other case did the use of the President's name significantly change the results obtained. This was a question on whether the United States ought to try to keep the Germans out of the islands off the coast of Africa (asked in July, 1941). When the President's endorsement of such a step was indicated, 6 per cent more people favored it than when the proposal did not mention Roosevelt.

On a number of other questions, dealing with such issues as the passage of the Lend-Lease bill, the adequacy of the national defense effort, conscripting the National Guard for military training, fighting to protect Canada against attack, etc., on which split-ballot results were available, there was in no single case a significant difference due to the prestige effect of using President Roosevelt's name. We are left with only one clear-cut example of Roosevelt's prestige, *viz.*, the question of keeping the Germans out of the islands off the coast of Africa, a question on which opinion was relatively unformed.

On the evidence from rather limited data, it appears that isolationist leaders had negative prestige, as indicated by the results of the following two questions.

(AIPO 8/9/40)

(A form) Lindbergh says that if Germany wins the war in Europe the United States should try to have friendly trade and diplomatic relations with Germany. Do you agree or disagree?

(*B form*) It has been suggested that if Germany wins the war in Europe the United States should try to have friendly trade and diplomatic relations with Germany. Do you agree or disagree?

	<i>With Lindbergh</i>	<i>Without Lindbergh</i>
Agree.....	46 per cent	57 per cent
Disagree.....	41	25
Don't know	13	18

(OPOR 7/10/41)

(*A form*) Senator Wheeler says that the power of the United States should be put behind a peace movement to end the war now. Do you agree, or disagree with Senator Wheeler's statement?

(*B form*) It has been said recently that the power of the United States should be put behind a peace movement to end the war now. Do you agree, or disagree?

	<i>With Wheeler</i>	<i>Without Wheeler</i>
Agree.....	38 per cent	43 per cent
Disagree.....	50	48
No opinion	12	9

Lindbergh's name both crystallizes opinion in the unfavorable direction and also shifts those who would otherwise approve of the policy to an attitude of disapproval. The effect of introducing Wheeler's name is not so clear cut, but gives evidence again of negative prestige.

Prestige can, of course, be achieved in other ways than with the use of headline names. For example, on the first question below, the prestige effect of the phrase "health clinics" is evident, while on the second, the fact that a bill has been introduced in Congress produces a more favorable response.

(AIPO 12/22/39)

(*A form*) Would you like to see government health clinics furnish birth control information to married people who want it?

(*B form*) Would you like to see the government furnish birth control information to married people who want it?

	<i>"Govt. health clinics"</i>	<i>"The Government"</i>
Yes.....	71 per cent	64 per cent
No.....	18	25
No opinion	11	11

(AIPO 8/26/39)

(*A form*) A bill has been introduced in Congress to prohibit the advertising of liquor and beer. Do you favor this bill?

(*B form*) Do you think liquor advertising should be prohibited?

	<i>A form</i>	<i>B form</i>
Yes.....	40 per cent	35 per cent
No.....	49	56
No opinion	11	9

Stereotypes. Various investigators have shown how the acceptance value of a proposition is changed if it is attached to emotionally

toned stereotypes. Two corroborating examples from the polls can be cited.

(OPOR 11/19/40)

(A form) In order to improve our national defense, do you think persons who oppose our present form of government should be forbidden to express their opinions in public, or should they be free to express such opinions?

Should be forbidden.....	30 per cent
Should be free	57
Qualified answer	8
Don't know	5

(B form) Do you believe in freedom of speech?

Yes.....	97 per cent
No	1
Don't know	2

If "Yes," ask:

Do you believe in it to the extent of allowing Fascists and Communists to hold meetings and express their views in this community?

Yes.....	23 per cent
No.....	72
No opinion	5

On the A form, a majority of 57 per cent vote for freedom of speech for persons opposed to our present form of government, but on the B form, when the specific labels "Fascists" and "Communists" appear, only slightly more than a fifth of the population endorses free speech for such groups.

Results show that when the phrases "declare war," and "training for war," are associated with any issue, it becomes less acceptable. For example, in the last week of October, 1941, when 24 per cent of the population answered "Yes" to the question "Should the United States enter the war now?", only 17 per cent of a comparable population voted "Yes" on the question, "Should the United States declare war on Germany now?" A declaration of war seemed more dangerous and final.

A final illustration of the effect of a stereotype is afforded by the following question, which indicates that people prefer to think of themselves as "against prohibition" rather than as "wets." Fewer say they would vote "wet" than would vote "against prohibition."

(AIPO 1/23/42)

(A form) If the question of national prohibition should come up again, would you vote wet, or dry?

Wet 53 per cent	Dry 36 per cent	Undecided 11 per cent
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(B form) If the question of national prohibition should come up again, would you vote for prohibition, or against it?

Against 59 per cent	For 31 per cent	No opinion 10 per cent
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Proposed Legal Changes. The suggestion that a law must be changed in order to carry out a specified policy immediately creates a certain amount of opposition on the part of many people who would otherwise be in favor of the adoption of such a policy. In the two following comparisons policies are presented for approval or disapproval with the indication on one form that a change of existing laws is involved, but without any such indication on the other.

(AIPO 9/19/39)

(*A form*) Do you think Congress should change the Neutrality Law so that England and France can buy war supplies here?

(*B form*) Do you think England and France should be allowed to buy war supplies in this country?

	<i>A form</i>	<i>B form</i>
Yes	53 per cent	61 per cent
No	33	31
No opinion	14	8

(AIPO 4/19/39)

(*A form*) We are prevented by law from lending money to foreign countries whose war debts are not paid up-to-date. Do you think we should change this law so that we might lend money to England and France, if there is another war in Europe?

(*B form*) In case Germany and Italy go to war against England and France, should we lend money to England and France to buy airplanes and other war materials in this country?

	<i>A form</i>	<i>B form</i>
Yes	20 per cent	29 per cent
No	75	65
No opinion	5	6

The next set of questions shows that the proposal of "adding a law to the Constitution" is viewed with less alarm than the suggestion that "the Constitution be changed" to achieve the same purpose.

(AIPO 11/30/39)

(*A form*) Would you favor adding a law to the Constitution to prevent any President of the United States from serving a third term?

(*B form*) Would you favor changing the Constitution to prevent any President of the United States from serving a third term?

	<i>A form</i>	<i>B form</i>
Yes	36 per cent	26 per cent
No	50	65
No opinion	14	9

Biased Wordings. It is almost meaningless to ask whether or not opinion can be affected by biased wordings in the questions. It all depends on the issue involved. The primary use of biased wordings

is to provide a method for the determination of the stability of opinion.

An example of the operation of suggestion is seen in the following two questions, asked in October, 1939, by AIPO. At this time the public was undecided concerning the likelihood of United States involvement in the war.

- (A form) Do you think the United States will go into the war before it is over?
 Yes 41 per cent No 33 per cent Don't know 26 per cent
- (B form) Do you think the United States will succeed in staying out of the war?
 Yes 44 per cent No 30 per cent Don't know 26 per cent

This type of split wording—positive vs. negative phrasing—does not always yield the same results. The next set of questions shows the operation of negative, rather than positive, suggestibility. People tended to disagree with *both* positive and negative statements of the proposition. Although the reasons for this reaction can only be inferred, some plausible explanations are (1) the statement that this is *our* war may imply that we are in some way responsible for the war—an interpretation that most respondents would reject; while the statement that it is *not* our war may carry the implication that we ought to stay strictly out of things—again an unacceptable interpretation and (2) the “some people say” introduction on so vital a subject when a person does not want to be told what to think may elicit more negativism than would appear in a “Do you think?” type of question.

(AIPO 9/9/41)

- (A form) Some people say this is *our* war. Do you agree or disagree?
 Agree 40 per cent Disagree 51 per cent No opinion 9 per cent
- (B form) Some people say this is *not* our war. Do you agree or disagree?
 Agree 43 per cent Disagree 51 per cent No opinion 6 per cent

But differences of opinion by no means always appear when wordings are deliberately forced. For example, in July of 1941 the OPOR wanted to test the stability of United States opinion with respect to aid to Britain after the entrance of Russia into the war. The following questions show that wording made no difference here.

- (A form) Some people say that since Germany is now fighting Russia, as well as Britain, it is not as necessary for this country to help Britain. Do you agree, or disagree with this?
 Agree 20 per cent Disagree 72 per cent No opinion 8 per cent
- (B form) Some people say that since Germany will probably defeat Russia within a few weeks and then turn her full strength against Britain, it is more important than ever that we help Britain. Do you agree, or disagree with this?
 Agree 71 per cent Disagree 19 per cent No opinion 10 per cent

Elmo Roper, director of the *Fortune* Survey, has reported two experiments on the problem of question wording.¹⁸ In the first of these, several issues related to the war were each presented in three forms: first, as straight unloaded questions ("Do you think Hitler wants to dominate the United States?"); second, with an interventionist bias ("Hitler will never be satisfied until he dominates the United States because it is the richest country in the world"—agree or disagree); and, third, with a non-interventionist bias ("Hitler is only interested in making Germany a powerful nation in Europe, and talk about his wanting to dominate this country is just British propaganda"—agree or disagree). One group received the set of unbiased questions, while a comparable group received the "interventionist" set, and a third group the "non-interventionist" set.

The most important finding here was that on issues where people were uncertain it was possible to produce sizeable effects by biasing the issue with an interventionist or non-interventionist argument, but where opinion was well crystallized biasing statements had relatively little effect on the results. The two following questions from Roper's study illustrate this point.

Unbiased Wording	Interventionist Wording	Non-Interventionist Wording
Do you think that Hitler wants to dominate the U. S.?	Hitler will never be satisfied unless he dominates the U. S. because it is the richest country in the world.	Hitler is only interested in making Germany a powerful nation in Europe, and talk about his wanting to dominate this country is just British propaganda.
Yes 69 per cent	Agree 68 per cent	Disagree ... 68 per cent
No 23	Disagree ... 23	Agree 21
Don't know 8	Don't know 9	Don't know 11
Do you think we would be able to keep our democratic form of government if Hitler dominates the rest of the world?	If Hitler wins, we won't be able to keep our democratic form of government long because we will be one nation against the rest of the world.	This country was built up mainly by people who came here to get freedom, and we will keep our democratic form of government even if Hitler does dominate the rest of the world.
No 40 per cent	Agree 47 per cent	Disagree ... 27 per cent
Yes 44	Disagree ... 37	Agree 60
Don't know 16	Don't know 16	Don't know 13

¹⁸ *Fortune* Survey, Vol. 23, No. 4, April 1941, p. 102, and Vol. 23, No. 6, June 1941, p. 70.

As a second part of the experiment each of these three groups were given some identical questions. The supposition was that the group which had been subjected to the series of questions biased in the interventionist direction might return more interventionist answers on this identical set than did the other groups (who received non-interventionist and neutrally worded questions). This did not prove to be the case, however. The replies of all three groups on these identical questions were essentially similar, indicating that the arguments to which they had been subjected had little or no carry-over effect.

A second similar experiment was conducted, using several labor issues, stating these neutrally, with a pro-union bias, and with an anti-union bias. The questions dealt with the desirability of permitting labor in defense industries to strike for such things as working conditions, hours, wages, closed shop, and jurisdictional disputes. The pro-union arguments were found to be ineffective, except on the question dealing with working conditions. The anti-union phrasings, however, had a very definite biasing influence, in that they elicited a significantly greater percentage of anti-union responses than did the neutral or pro-union statements. This effect is illustrated by the following example taken from Roper's data. Furthermore, there was a carry-over effect in this anti-union group when, as in the previous experiment, the three groups were presented with a set of identical questions dealing with strikes in non-defense industries. This anti-union group returned a larger proportion of anti-union responses on these identical questions than did the neutral and pro-union groups. These latter groups were not significantly different on either the biased or identical questions.

<i>Unloaded</i>	<i>Pro-Union</i>	<i>Anti-Union</i>
Do you think that the government should, or should not forbid labor in defense industries the right to strike about working conditions?	Because every man is entitled to safe and healthy working conditions, labor (in defense industries) should be allowed to strike for them.	Because working conditions in this country are the best in the world, labor (in defense industries) should not be allowed to strike about them.
Should 59 per cent	Disagree ... 45 per cent	Agree 74 per cent
Should not. 29	Agree 45	Disagree ... 17
Don't know 12	Don't know 10	Don't know 9

Personalization of the Question. "Personalization" in this context refers, not to the use of the so-called "subjective" type of question, "Do you think, etc?" but to a form of question which requires the

respondent to say whether or not he himself would carry out a specified course of action. The polls afford but few illustrations of such personalized questions, but those which have been asked show interesting results.

On three repetitions of the following split, the "Go in" percentage on the B form ran from 7 to 12 per cent higher than on the A form, a clearly significant difference in each case.

(*A form*) Do you think the United States should declare war on Germany and send our army and navy abroad to fight?

(*B form*) If the question of the United States going to war against Germany and Italy came up for a national vote within the next two or three weeks, would you vote to go into the war, or to stay out of the war?

Returns from a similar comparison which has been repeated in split form seven times have averaged 4.5 per cent more in favor of entering the war if people are asked to vote. (*A form*: "Should the United States enter the war now?" vs. *B form*: "If you were asked to vote today on the question of the United States entering the war against Germany and Italy, how would you vote—to go into the war, or to stay out of the war?"')

In one sense, the use of the B form is not realistic, since there exists at present no Constitution provision for a popular referendum on the declaration of war. Yet the results do reveal the effect of phrasing the issue in terms of personal participation. People are less resistant to a policy of military intervention if they feel that they will have direct part in determining that policy.

Another instance of the effect of personalization is provided by these split questions on the expansion of our army, navy, and air force, asked in May, 1940, by AIPO.

(*A form*) Should the United States do any of the following at this time?

- | | | |
|--|----------------|-----------------------|
| (a) Increase our army further, even if it means more taxes? | | |
| Yes 88 per cent | No 9 per cent | No opinion 3 per cent |
| (b) Increase our navy further, even if it means more taxes? | | |
| Yes 83 per cent | No 12 per cent | No opinion 5 per cent |
| (c) Increase our air force further, even if it means more taxes? | | |
| Yes 90 per cent | No 6 per cent | No opinion 4 per cent |

(*B form*) Should the United States do any of the following at this time?

- | | | |
|---|----------------|-----------------------|
| (a) Increase our army further, even if you have to pay a special tax? | | |
| Yes 79 per cent | No 14 per cent | No opinion 7 per cent |
| (b) Increase our navy further, even if you have to pay a special tax? | | |
| Yes 78 per cent | No 15 per cent | No opinion 7 per cent |
| (c) Increase our air forces further, even if you have to pay a special tax? | | |
| Yes 86 per cent | No 10 per cent | No opinion 4 per cent |

Although opinion is overwhelmingly in favor of expansion in either case, it will be seen that personalization ("even if you have to pay a special tax") decreases to a small extent the amount of approval.

The few data we have been able to marshal show that a definite effect can be produced by personalizing the issue. Again, in the absence of validating criteria, it cannot be said that the personalized form is superior or inferior to the unpersonalized. Obviously, not all types of issues are suited to personalization. Where one does have a choice between personalized and non-personalized forms, it is simply a matter of deciding which form presents the issue more realistically and which is more appropriate to the particular purposes of the investigation.

INTERPRETATION

1. The extent to which the wording of questions affects the answers obtained depends almost entirely on the degree to which the respondent's mental context is solidly structured. Where people have standards of judgment resulting in stable frames of reference, the same answer is likely to be obtained irrespective of the way questions are asked. On the other hand, where people lack reliable standards of judgment and consistent frames of reference, they are highly suggestible to the implications of phrases, statements, innuendos, or symbols of any kind that may serve as clues to help them make up their minds.¹⁵

2. Questions which elicit responses concerning the acceptance of established norms or values often fail to indicate the true opinion of individuals unless such questions are followed by others which concretize the issues involved or place them on some behavioral level.

Similarly, questions which bluntly state some deviation from an established norm or value are less likely to receive favorable replies than questions which imply the same deviation but state it more by implication.

3. A few suggestions for the construction of ballots emerge from this review:

a. Since any single opinion datum is meaningful only in so far as it is related to a large personal and social contact, it is essential that responses to many single questions asked by the polls be com-

¹⁵ Cf. Cantril, H. *The psychology of social movements*. New York: Wiley, 1941, Chap. 3.

pared with responses to other questions which place the same issue in different contingencies.

b. No claim can be made that the dichotomous, the multiple-choice, or the free-answer type of question is consistently superior. It is suggested, however, that in general wherever a new and somewhat complicated problem is to be posed or wherever a question concerns an issue about which people have thought little or perhaps care little the free-answer type of question should be used on at least one form of the ballot to discover (1) to what extent people are aware of the problem posed and (2) in what way they themselves cut the issues. On another form of ballot a dichotomous or cafeteria question may be used for comparison. After the free answers have been analyzed, more meaningful questions with stated alternatives can be devised.

The chief advantage of the multiple-choice question is that it allows for a more accurate placement of opinion than the dichotomous question in all those instances where the issue may not be clear cut. The chief danger of the cafeteria question is that the presentation of various alternatives, whether verbally or on printed cards, frequently irritates or confuses respondents to such an extent that the answers they finally give, although they can be classified and percentaged, may have little reliability. There is also the well-known tendency to choose a middle-way. The dichotomous question has the enormous advantage of simplicity over the multiple choice and is recommended wherever its use will not obscure alternatives or force issues. It is also a more familiar method of presentation to the general public than the use of several alternatives.

c. The split-ballot technique should be used wherever possible in order to test the stability and consistency of opinion by noting the effect of (1) variation between free and prescribed responses, (2) variation of alternative answers presented, (3) variation of contingency surrounding the issue, (4) bias by an introductory statement or deliberately forced wording, (5) prestige introduced by a word, name, or phrase (6) explicit rather than implicit presentation of alternatives, (7) stated deviation from currently accepted practice, (8) variation of the context provided by other questions on the ballot, or (9) personalization of the issue.

THE NATURE OF SLOGANS

BY LEOPOLD BELLAK

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THE slogan deserves an important place among the problems of social interaction and control: it holds a central position among problems of propaganda and advertising.

It is all the more surprising to find that the psychological literature on slogans is practically negligible. There are, of course, several articles on slogans as means of advertisement. Those are for the most part compilations of slogans in use, with only a few critical or experimental investigations of the relative effectiveness of slogans in advertising. Their purpose then is in general to determine those formal aspects which seem characteristic of "good" slogans, their "goodness" usually being measured by the frequency with which they are correctly associated with the product they advertise (Shuman, 17).

Meredith (11) has been primarily interested in the linguistic aspects of slogans, while Oliver (12; 13) and others have made historical surveys of political and commercial ones. Only two authors, Sherif (16) and Thouless (18), are explicitly concerned with the dynamic psychology of slogans.

In viewing the various studies, two things become fairly evident: that there has been no clear conception as to what specifically constitutes a "slogan"; and particularly that too little attention is being paid to the dynamic problems involved.

WHAT IS A SLOGAN?

Our first task is to elaborate the concept of the slogan. The general comprehensive category of which the slogan is one species is that of *directive language*. Within this broad category it is necessary to distinguish between the slogan on the one hand and the proverb, the epigram, the aphorism, the motto, and other kinds of catchphrases on the other. The *proverb* is defined in Webster's Dictionary (19) as "an old and common saying; a phrase or expression often repeated." It constitutes such a kind of directive language as may be helpful in everyday life, a way of passing on

common sense in a highly condensed, often metaphoric manner. Its directive quality consists then usually of one person's *advice* to another expressed either implicitly or explicitly: e.g., "The early bird catches the worm," or "You can judge a man by his friends."

An *epigram*, on the other hand, is defined as "(1) an inscription, especially one in verse; (2) a short poem . . . ; (3) a bright or witty thought tersely and sharply expressed."

The epigram therefore seems directive only in so far as it expresses a certain *thought* in such a condensed, meaningful way as to have convincing and suggestive power: it makes one see a certain person, a certain problem in a particular way, and gives a strong feeling of concise, pregnant, sharp expression.

An *aphorism* is "a pithy, compendius sentence stating a general sentence or truth." It is probably very similar to the epigram, but often has a more *general truth*, less sharply expressed.

The *motto* "is a sentence, phrase or word inscribed on anything as appropriate to or significant of its character or use; also a short, suggestive expression of a guiding principle; a maxim."

In other words, it is directive only in so far as it indicates the use, character, or *motif* of something or somebody.

To return now to our original subject, the *slogan*, we find in Webster: "Slogan; n. (Gael. sluagh-ghairm, i.e. an army cry: sluagh: army plus gairm: a call, calling). The war-cry or gathering word of a Highland clan in Scotland; hence, any rallying or battle cry."

This original meaning differs considerably from the present popular use of the word. Under slogans we find such examples as "time to retire"; "an apple a day keeps the doctor away" or "business as usual." "Slogan" has been used for almost any kind of phrase. We suggest that, for scientific use at least, this word be restricted to denote *a phrase which consists of only a small number of words using or implying the imperative or hortative; a phrase which is identified with one particular social group at a given time, and can be considered somewhat in the nature of a battle-cry, purporting to arouse much affective response.*

Under imperative or hortative we include such expressions as: "Let's go over the top!" or "we will do it again!" English grammar, like the Latin, sometimes fails to differentiate between hortative, optative, and even predicative. "Bibamus" may be translated either as "we want to drink," "we will drink," "let us drink," or even

"drink." In fact, Hayakawa (7) thinks a characteristic of all directive language is that it says something about the future. We are willing within the limits mentioned above to accept his statement for the slogan. In some cases one would have to include *implicit* references to the future: "Remember Pearl Harbor" would have to be interpreted: "Remember Pearl Harbor and avenge it well!"

As one can readily see, many expressions that are called slogans in business and other fields would not come under this category according to the above criteria. Though they may conform to one or more of them (*e.g.*, use of the imperative: "Watch the date on the can") they do not meet them all. We suggest that this kind of directive language be called "catchphrases." They differ dynamically from the slogan, as we shall soon point out.

We have mentioned the temporal determinant above because the element of *timeliness* differentiates the slogan from the motto, proverb, or aphorism. Slogans are usually short-lived, created to fit a particular occasion.

In addition to the above characteristics, the slogan is marked by others of form and content: these do not necessarily differentiate it from the motto, proverb, or aphorism. The slogan, however, unlike the others, is practically always short.

Lumley (9) thinks that the average slogan has about four words and quotes an English writer to say that the ideal slogan has from three to six. Obviously, no hard and fast rule would be of value here.

Many other characteristics have been suggested for what is popularly termed "slogan" and what largely corresponds to what we call "catchphrase." Some of these qualities do not hold true for our concept, while most of them are merely optional. Lumley (10) lists the following characteristics as often found in what he calls slogans:

- Rhythm
- Alliteration
- Alliteration and Antithesis
- Ringing repetition of sounds
- Repeated affirmation
- Brevity
- Appeal to curiosity
- Punning
- Sentiment of patriotism

Cordiality
Presumptuousness
Authoritative note
Class appeal
Obscurity of origin
Euphoniousness
Timeliness

Crane's (4) list is similar, adding a few specific suggestions for business use. Shuman (17) mentions the Slogan Rule of Three: mention of firm, brand, and product in the slogan. He also suggests that explicitness may often in business "slogans" (catchphrases) be sacrificed with advantage for brevity.

Though many of the above characteristics would not hold true for our concept of a slogan (*e.g.*, appeal to curiosity), others, such as rhyme, the use of metaphors (often in the form of slang), frequent use of collective references (*we*, *us*) and the characteristics previously mentioned could be added.

If the linguistic criteria do not clearly distinguish the slogan from the motto, aphorism, and proverb, they are more effective in differentiating it from another type of directive language—the direct command; in any event, sergeants or officers are rare who command their troops in rhyme and rhythm.

The direct command surely is one form of directive language, probably its most outspoken, if not always its most effective form. It can be distinguished from the slogan—which has the imperative in common with it—by the fact that it is usually given by a specified authority to a specified person or group, whereas the slogan is usually a kind of direction given anonymously.

It is not our ambition to create a hard-and-fast classification of slogans and related phrases. We do think, however, that this tentative attempt at defining "slogan" will help us better understand the dynamic principles involved. But it is rather obvious that the lines between motto, proverb, and slogan are not strictly drawn; or at least, that some of them may change from one group to another, should context or formal characteristics be changed, or merely the tone of voice. Thus "*mens sana in corpore sano*" may be an aphorism on the wall of a bathhouse or a motto in a boy's diary. But if, for example, it should happen to be identified with a group of people agitating for the creation of parks or swimming pools, and opposed by another group in favor of building new

churches, and if the phrase is pronounced with fervor at a meeting, then it has indeed become a slogan by definition.

The social importance of directive language has been widely recognized. In keeping with popular custom, we could quote Aristotle as having said that the metaphor is the strongest force in the world. A more recent writer, Le Bon (8), says:

In the first rank of the important factors which shape the course of history we must place the formulæ of religious, political and social life. In every age, after a brief period of uncertainty, the needs and the aspirations of the masses eventually find expression in short, sententious phrases. Universally accepted, they ballast the nation's mentality, give guidance to emotions and give rise to unity of consciousness and action. These magic words need not represent the truth, nor need they be particularly definite. It is enough that they should produce an impression. Their vagueness enables everyone to see in them the embodiment of his dreams, and to find in them a solution of the problems of the day.

Just how important a part slogans play as motivating factors has never been experimentally determined; such an investigation seems very worthwhile. If wide diffusion and general familiarity and acceptance are a measure of the power of slogans, one is surely inclined to agree with Le Bon.

Hardly any thorough attempts have been made to investigate just what constitutes the power of slogans. It would be erroneous to assume that slogans are too recent an innovation to have aroused interest. The Romans had their "panem et circences," and Cato Maioris refrain "ceterum atque censeo Carthaginem esse delendam" became as "delenda est Carthago" the slogan of his followers. All through the Middle Ages, authors report the existence of slogans. Lumley (10) relates that when the English calendar was corrected in 1751 by striking out eleven days, the idea arose that the wages for those days were being lost, and "Give us back our eleven days" became a popular slogan. There is probably no reason to doubt that slogans have existed in one form or another ever since more complex linguistic symbols were used as means of social communication.

DYNAMIC PROBLEMS

An attempt to understand the effectiveness of slogans was made by Thouless (18). He considers the slogan as a tabloid statement expressed in a fixed form of words. Thouless calls "tabloid thinking" the inclination to reduce a complicated body of data

to an oversimplified formula which omits all qualifications and uncertainties.

Thouless also comprises under slogan what we wish to separate as catchphrases. But in either case it holds true that such a tabloid form can be easily remembered and easily passed from one person to another. As an oversimplified working-hypothesis it provides a consistently practical attitude.

Thouless thus gives insight into the slogan from the functional point of view. Sherif (16) made an attempt to understand the dynamics of slogans from the point of view of the Gestalt theory. Consistent with his general views expressed elsewhere (15), he points out that slogans are structurations of sentiments in critical times; that is, one tends to perceive things in as "good" a pattern as possible: the slogan is a Gestalt in an unstructured field.¹

This hypothesis seems quite satisfactory as far as it goes. But it seems as though psychoanalysis must supplement Gestalt theory.

We may say with either school that *motto, proverb, aphorism, slogan, catchphrase, and all other kinds of directive language are guiding principles in conditions of instability*. Psychoanalysis would assume in addition—as it does in the theory of hypnosis—that directive language derives part of its effect, at least historically, from the role which directive language—issuing from the parent—once played for the child. It would say that in times of conflict and crisis one looks for support, is willing and even wants to be led, as one was once helped and led by the parents.

Such guidance in the social field may come about either by subordinating oneself to a leader or by subordinating and identifying oneself with a group (army, church) with regard to both its behavior and its rules (Freud, 6). The slogan often allows for both. It has an authoritative character and it appeals to the individual as a member of the group. The large number of collective references (we, us) in slogans is evidence of the latter. One accepts the slogan as directive because it solves one's conflict (gives a formulation), since it carries the weight of authority and since, like a military uniform, it identifies one with the group. It enables one to belong to the in-group.

The Gestalt hypothesis implies that a slogan is effective because

¹ Le Bon said in the paragraph quoted above that slogans arise particularly in times of uncertainty.

it is the best possible expression of existing sentiments at a given time. If that were all, one would wonder why it should be such a desirable means of social control. If it merely expresses what people feel most strongly in any case, why should one take pains to influence people by means of the slogan? Surely people must have several, possibly conflicting, sentiments. The slogan, then, is effective because it formulates certain sentiments, thus bringing them into action rather than others. It probably does this both by being a good Gestalt and also by its authoritative note and its element of participation-value.

This is, by the way, where the simple catchphrase differs dynamically from the slogan. "Good to the last drop" does not identify anybody with any group. Few of the catchphrases in business or elsewhere use the imperative. Where they do, psychoanalytic hypothesis may have explanatory power. Otherwise, they seem to be explained chiefly by Gestalt principles. As far as firm, name, and product are used in business phrases, principles of association might be important.

To return to slogans, however, with Freud's doctrine of regression under group conditions and in time of crisis, one may also explain the decrease in critical and ethical standards which one feels necessary to postulate in order to understand the ready acceptance and effectiveness of certain slogans in the past. More specifically, one may say that it may be one of the functions of certain slogans to allow moral regression: it constitutes an authoritative and a group sanction of aggression which may otherwise not be permissible to the individual. On the other hand, a slogan as a battle-cry for a group trying to advance the causes of socialized medicine, for instance, would surely have no such implication.

From another angle, too, we may be able to understand the psychology of slogans and other forms of directive language; psychoanalysis has long ago shown the "magic" meaning of symbols: the primitive identification of symbol with object, and the power of symbols thereby derived. Magic formulae, spells, benedictions, etc., are based on this assumption. Le Bon, in the passage quoted above, mentions religious slogans, and speaks of "magic formulae." Many of our present-day directive utterances are accompanied by appeals to supernatural forces and magic action—as, for instance, the oath, initiation-rites, etc. Hayakawa (7) calls these "directive utterances with collective sanction."

Both the Gestalt and psychoanalytic hypotheses would allow one to predict that a person less well integrated mentally will be more affected by slogans than one having firm integration. Psychoanalysis would permit us to state, moreover, that the more immature a person, the more dependent upon parental figures and other supports, the more susceptible he will be to slogans.

Since groups are made up of individuals, slogans are, in part, effective because they allow each individual to interpret them in his own way. Le Bon has pointed out that the vagueness of slogans enables everyone to see in them the embodiment of his own dreams. In other words, it could be said that people "project" their individual sentiments into the slogan.

The slogan has a few characteristics in common with wit and dreams; for example, one might consider the use of condensation and the employment of double meaning: "Don't grind your axe, grind the Axis" is an illustration of this. Like wit, the slogan must be short, simple, "economical." But unlike wit, the slogan can be coined—to a certain extent at least—at will. One can "look for" a slogan as one can hardly "look for" a joke. The creation of a joke seems a much more complicated and less conscious process.

We may say in the light of the Gestalt hypothesis that the "better" a configuration it represents—according to the hypothesis of this school—the better the slogan will be. Though experimental proof of this hypothesis in the future seems quite desirable, we may accept it for now. Or, again in the terms of James, Thouless, and, generally speaking, the spirit of the school of functionalism, we may say that the slogan as a form of tabloid thinking is judged the better the more economical a form it takes. But, even so, it will be helpful to examine slogans and their effectiveness from the point of view of the kind of appeal they represent. Slogans, being powerful means of social *control*, can be used in the service of education, socialization, and group formation as well as in the service of asocial tendencies, once one has decided which existing sentiments or attitudes can best be put in the service of a certain idea.

One could list all the possible sentiments one can think of and then classify slogans according to the particular sentiment to which they appeal. For specific occasions this might be easy and practical. We followed this plan in the categorizing of the slogans in the list presented later. In general, it might, however, be simpler to categorize them according to the aspect of personality played upon.

Proverbs probably appeal more often to the super-ego (conscience) than do slogans ("Never put off till tomorrow what you can do today" or "Render unto Caesar the things which are Caesar's"). However, there are some slogans which also appeal to the super-ego. Cf. the German: "Für Gott, Kaiser, und Vaterland!"; to a certain extent, "Egalité, Liberté, Fraternité"; and "Make the world safe for democracy." But it is easy to see that the slogan by its very nature as a battle-cry always involves the id (aggression) at least implicitly, regardless of what other appeals it may utilize. In fact, it may be said that the slogan chiefly employs aggression, with the ego (reason) or the super-ego (conscience) as subsidiary means. Aggression, however, is of course often in the service of reason and conscience.

Besides appealing to the super-ego, many proverbs appeal to the ego (reason) ("A bird in the hand is worth two in the bush"). The catchphrase "Safety First" appeals to both reason and conscience: As a sticker on an automobile it asks the driver to drive slowly rather than risk other people's or his own health and life. The slogan "We must hang together, or we will all hang separately" is partly an appeal to reason: The old Roman tale about many sticks together being harder to break than each one separately is at its basis. Fear is probably another component; united aggression, the goal.

Some slogans make a direct appeal to aggression: "Down with Hitler!" "Don't grind your axe, grind the Axis," and "Pay your taxes, beat the Axis" mingle appeal to conscience with aggression.

Beside the fact that slogans exert influence for the dynamic reasons given above or their formal qualities mentioned earlier, there are other factors which may determine their success or failure. One may be an element of familiarity which may pertain to a certain slogan; it may be the variation of a proverb or a Bible quotation, an excerpt from a song or a famous speech ("the ramparts we watch"), or even a variation of an earlier slogan ("Remember the Maine," "Remember Pearl Harbor"). Both because it facilitates learning and is thus even more economical than the average slogan and because of its identification with the sentiment already existent in the earlier source, such a variation of a known theme makes a slogan more likely to be successful.

Another factor that may help to popularize a slogan is its individual history. "Praise the Lord and pass the ammunition," being

credited to a chaplain at Pearl Harbor, may by the very nature of its epic origin become successful. On the other hand, mere prestige-suggestion may put a slogan on its way. When the President of the United States utters a slogan in one of his speeches, it becomes widely accepted largely because it was he who suggested it.

Several facts may have a bearing on the failure of a slogan, even though it may be sound both formally and dynamically. We have said that a slogan must in condensed form express the sentiments existing at a given time. By definition, then, we can say that a slogan will eventually fail to appeal if the sentiments have changed in the meantime.

If it is true that sentiments change more quickly in our days because of a higher degree of social interaction brought about by technical developments, we can understand why current slogans seem more short-lived than ones familiar from history. But much more important in this respect is the fact that in our day one is soon satiated by a certain slogan; a slogan once adopted by a powerful group is disseminated by all available technical means: one hears it over the radio, sees it in the movies, reads it in the newspapers, on posters; neon lights, loudspeakers, merchandise, buttons, etc., all do their part. No wonder, then, that its effect soon wears off, that it loses its appeal. Thus *complete satiation* in the Gestalt sense is achieved in a comparatively short time. This is particularly apt to happen in wartime when sentiments are more unified and any existing slogan is supported and used by all circles and authorities. In normal times, a greater multiplicity of slogans advanced by groups constituting only part of the population would probably prevent such satiation and fatigue. But then the number of existing slogans compete for attention, thus decreasing the individual effectiveness of each.

DISCUSSION OF CURRENT SLOGANS

We present below a list of current slogans.² Though originally compiled for a different purpose, we may use them here for some discussion.

² A large number of these slogans have been made available by courtesy and kindness of Mr. Robert Allen and Mr. Drew Pearson (Washington Merry-Go-Round) who conducted a national slogan-contest in March and April, 1942. The slogans marked with a single asterisk have been selected by them as the best three among the several thousand submitted each week during the contest; the three marked with two asterisks were selected by them as the best among the total of about 50,000 slogans.

GENERAL EXHORTATIONS TO ACTION

Let's shoot our way out

Let's go, John Doe

Let's hang together or we'll all hang separately

Remember Pearl Harbor

* We are all in it, let's win it

* Let's see it thru in forty-two

* Who fights for freedom never fights alone

* We did not want this war, but we will win it

* Forward Americans, the world's free men are treading on your heels

For vigil, vengeance, victory

There is no time to lose, there is still time to win

Victory in the air, unity on the ground, freedom on the seas

Smile as you do it and keep slugging

Spare nothing and win all

Americans: work, fight, keep the torch of freedom bright

Be a fighter today for a brighter tomorrow

To win or not win: what do you say, America!

* Let's fight to *their* finish

Praise the Lord and pass the ammunition

Give them hell and keep them guessing

V for victory

Make America the arsenal of democracy

EXHORTATIONS TO ACTION AGAINST ENEMIES

1. *Against Axis*

Don't grind your axe, grind the Axis

Axe the Axis

Yank the wheels off the Axis

Let's give the axe to the Axis

U. S. A.: united stand against the Axis

U. S. A.: unity smashes the Axis

Pay your taxes, beat the Axis

* Let's toast the three with T.N.T.

* Life, liberty, and the pursuit of the Axis

** The Axis we will sever—Old Glory forever

The eagle's scream ends the Axis dream

Make the Japs yap and the Huns run

2. *Against Germans*

Stamp out Hitler with defense stamps

Keep Herman squirming

Hang together—hang Hitler

3. *Against Japanese*

To Tokyo let's go

Shut your trap, catch a Jap

Make the Japs yap

Wipe the Jap off the map

Close the night on the rising sun

EXHORTATIONS TO ACTION ON SPECIFIC ISSUES

1. *Taxes*

Pay your taxes, beat the Axis

2. *Stamps, Bonds*

Stamp out Hitler with defense stamps

Pay your membership dues in the society of free men: buy defense stamps

Bank on the Yank for victory: buy bonds

3. *Rumor*

Shut your trap, catch a Jap

Beat rumor with humor

A rolling rumor gathers only loss

PRAISING "OUR SIDE"

1. *U. S. A. and Its People*

God bless America, we'll fight for it

U. S. comes first at work and war

Our country—first at work and war

We did it before, we'll do it again

America at work is invincible

Bank on the Yank for victory

No rising sun can make an eagle blink

We do not choose to run

2. *Our Values and Aims*

Sweet land of liberty—we'll fight for thee

* War is our job and freedom our pay

Work for it, fight for it, it's worth it: Democracy

Keep them rolling, keep them flying, keep democracy from dying³

** Hit them hard, hit them fast, win the peace and make it last

** Work, fight, give: make democracy live

All for one and one for all: democracy can never fall

We fight to stay the American way

Bondage? Never! Liberty forever!

A fight to their finish: then freedom to the end

They shall not mock democracy

From pole to pole let freedom roll

Freedom is our trust, conquer we must

Forward to freedom

One can try now to analyze the psychological aspects of some of the current slogans and attempt to estimate their potential effectiveness from this point of view. Even though this is possible, it may happen that one fits the existing sentiments at the time better than another. Thus, one really needs to be very well informed about the emotional trends of people, in addition to having an awareness of the more stable psychological principles involved.

³ Pearson and Allen's own slogan.

Satiation may in part account for the fact that the slogans of the last war no longer retain their original force, even though the sentiments to which they appeal are very similar to those of the present. "Let's make the world safe for democracy" would surely fit the present situation. In addition to satiation we may assume that this slogan—and others from the last war—cannot be successful since they arouse a conflict between a feeling of disappointment resulting from the failure to achieve a permanent peace last time and an enthusiastic, hopeful attitude this time. The current sentiment is not only to win the war for democracy, but to make it last. Slogans which emphasize this resolution stand a very good chance of becoming popular. In the presented list the one, for example, selected by Pearson and Allen, namely, "Hit them hard, hit them fast, win the peace and make it last" seems excellent in this respect. Though it conforms well to the concept of a good slogan in all other respects, its length will make it unsuitable for many purposes.

Some of the slogans mentioned fit our concept only implicitly, for instance: "Who fights for freedom never fights alone." It is originally much more an aphorism than a slogan. It may be used as a slogan, nevertheless, by becoming identified with the cause of the democracies at the present time. At first glance, though, it seems much more a statement than an imperative or hortative; one may surmise the meaning, however: Fight for Freedom, and you shall not fight alone! *i.e.*, "God and your friends will be with you," thus somehow implying the exhortation, accompanied by a reassurance. It is true of "America at work is invincible," which really tries to convey similarly "Work hard and we will be invincible."

It may be interesting to note that all three slogans selected by Pearson and Allen as the best among 50,000 conform explicitly to our definition of a slogan.

"Praise the Lord and pass the ammunition" is probably one of the best slogans among the present less well-known ones. It has several strong points. On the one hand it appeals to the super-ego and pacifies it by the request to praise the Lord. One is thus assured of one's essential righteousness and may therefore expect help from one's fellow men and God himself in one's self-defensive endeavor. Beside this feature, this slogan has the advantage of being a variation of a familiar religious phrase (Praise the Lord). In addition it has a historical background, as *Life Magazine* reported, and as has been mentioned briefly before: It is ascribed

to a courageous army chaplain fighting at the time of the Japanese attack on Pearl Harbor. This epic background of bravery, and the absolution it implies for fighting, coming from a man of God himself, adds to its excellence. Last, not least, the humorous incongruity of "Praise the Lord and pass the ammunition" contributes to its appeal.

On the other hand it becomes quite clear that its appeal will be definitely limited to the actual fighting force. By its very nature, it will hardly become the slogan of the civilian population in back of the war effort.—It will hold true for any slogan, that it is more or less apt only for a certain group, or for a certain purpose.

A similar appeal to aggression as part of one's duty, etc., is represented in "The Axis we will sever—Old Glory for ever." Probably the rather difficult word "sever" may impair its value.

Other slogans appeal more to the ego. "Let's hang together or we will all hang separately" appeals chiefly—as pointed out before—to commonsense. Its appeal may be enhanced by the fact that it goes back to Benjamin Franklin, who used it to admonish the Thirteen States to realize the value of unity for their common good.

Some of the slogans make an outright appeal to aggression. "Down with Hitler" and "Hit them hard, hit them fast, win the peace and make it last" introduce current ideological issues in addition and are indeed excellent. "Let's give the axe to the Axis" is almost pure aggression. It gets some of its effect from the clever word play. On the other hand, its bold aggressiveness will restrict its appeal to a very emotional population, or even more to forces in actual combat. "V for Victory" probably fulfills the same purpose for the general population much better, since it is less outspoken as far as aggression is concerned, and thus less apt to arouse the guilt feelings of the civilian population. Its extreme brevity—it may be condensed to the one letter V—explains part of its success. At that, it probably became more popular as a *symbol* than a slogan. The "V" filled a long felt need of the allied nations and their sympathizers for a sign to match the swastika.

Since we have found that slogans depend largely upon the sentiments existing at a particular time, it is obvious that they may be studied as indicators of public sentiment. Thus the slogan "Make America the arsenal of democracy" can in all probability safely be considered as having attained maximum efficiency at a time when America was still hesitating about its actual participation in the

war and had assumed the role of a supply-house for England and its allies, rather than that of an active belligerent. It meant in essence: We will furnish you with supplies but no more.—In so far as it is, of course, still true that America represents by far the greatest industrial power of the allies, and is thus able to produce a surplus of material not used by its own forces, it can still supply the allies, and the slogan still has merit. But otherwise it has surely been overtaken by a more aggressive spirit.

SUMMARY

The suggestion is made to reserve the word "slogan" for such directive phrases as have the characteristics of brevity and timeliness, use the imperative, are identified with a certain group, and can be considered essentially as battle- or rallying-cries. An attempt is made to differentiate the slogan from the motto, proverb, aphorism, commercial and other catchphrases.

The power of slogans can be understood by means of the hypotheses of various psychological schools. It was found that certain additional factors, such as prestige of the originator of the slogan, etc., may influence its effectiveness, and that the change of sentiments and satiation with a certain slogan may, among other conditions, limit its lifetime. Some current slogans were discussed.

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PARALLELS IN THE BEHAVIOR OF SCHIZOPHRENICS, PARETICS, AND PRE-SENILE NON-PSYCHOTICS *

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WHETHER or not the psychotic patient may be described as "prematurely old" in some aspects of his behavior is a question which has important implications for theories of the etiology of mental disorders. Although it seems highly improbable that any single factor will ultimately be found to account for the diverse behavioral manifestations of senility and psychosis, the problem of determining whether any similarity exists between these two states has nonetheless caught the interest of investigators. An attack upon the problem requires a prior demonstration of reliable differences between the behavior of psychotic and non-psychotic subjects of the same age, and between younger and older non-psychotic subjects. Once these differences have been established, it is possible to determine whether or not the psychotics deviate from the non-psychotics in the same way that older non-psychotics differ from younger non-psychotics. The question of whether or not the psychotic may be described as "prematurely old" in the aspects of his behavior studied then becomes answerable.

The problem of demonstrating differences between psychotic and non-psychotic groups has been examined in numerous recent researches, with conflicting results. The usual approach, made by clinical psychologists who are interested primarily in the differential diagnosis of mental disorders, has been to examine the intellectual components of psychoses through the application of psychometric techniques. The work of Rabin (15; 16), for example, involves the administering of the Wechsler-Bellevue Adult Intelligence Scale to schizophrenic, manic-depressive, and psychoneurotic patients in an attempt to identify characteristic patterns of scores for these groups as compared with a group of student nurses. Only Rabin's results with schizophrenics, derived in part from a selected group of nineteen patients, aged 18 to 25, are relevant to the present

* This paper is based upon a study undertaken under the direction of Dr. Maud A. Merrill.

investigation. The results are presented in terms of rank order of test scores, ranging from highest to lowest. The schizophrenics scored highest in information, comprehension, arithmetic, and block design tests, and lowest in digit repetition, digit-symbol substitution, picture completion, and picture arrangement tests, while the nurses scored highest on digit-symbol substitution, comprehension, and object assembly tests, and lowest in picture completion, digit repetition, and arithmetic tests. The pattern of high and low scores in the schizophrenic group was sufficiently distinctive to permit the development of a schizophrenic "index"—a ratio of test scores which reliably differentiates schizophrenics from student nurses. With respect to the more basic problem, Rabin concludes, ". . . the pattern obtained in schizophrenia is entirely different from that obtained in old age, and, presumably, in organic brain disease" (15, 97).

Still more recently Wechsler (19, 149, Table 31), also using the Bellevue Intelligence Scale, specifies characteristic signs which are believed to be typical of the performance of certain psychotic patients on this scale. These signs have not been statistically validated, but are the outgrowth of impressions gained from wide clinical experience with the Wechsler-Bellevue Scale. Rules of thumb, again not yet statistically validated, are presented for determining when a score on a single test deviates significantly for a given subject, and the scores so deviating are treated as signs of the presence or absence of mental disorder. In the case of schizophrenia, the following, among others, are cited as characteristic: information score good; vocabulary score high; comprehension generally good but occasionally poor; arithmetic poor; memory span unpredictable; similarities low (paranoid); picture completion low in hebephrenia and relatively high in simple schizophrenia; digit-symbol substitution low; block designs better than object assembly; large inter-test discrepancies.

Similarly, the investigations of schizophrenic and parietic patients by Babcock (2), Altman and Shakow (1), Malamud and Palmer (12), Davidson (6; 7), and Kendig and Richmond (11), using the 1916 Stanford-Binet Intelligence Scale, suggest that in these psychoses tests utilizing previously formed associations, such as vocabulary items, showed less impairment than those using new associations, such as memory and judgment. A number of discrepancies between the results of the foregoing studies and those reported by Rabin are observable.

When these and other results of standardized tests applied to psychotic individuals are compared with the results of similar tests applied to non-psychotic individuals of older ages, a similarity between the patterns of low and high scores characteristic of the two groups is often apparent. To give but one typical example, the investigation of Jones and Conrad (10) on the decline of Army Alpha scores with age suggests that tests of information and vocabulary hold up longest with age, while tests of common sense, numerical completion, and analogies show the most rapid decline. The superficial similarity between the patterns described here and those described for the psychotic groups is at once apparent. On the other hand, Cameron (4; 5) using a sentence completion test and the Vigotsky block test, with schizophrenics and seniles, identified certain differences between these types of patients in language and thought disorganization, and in ability to maintain the boundaries of a task.

This disagreement in previous results may be a logical outgrowth of the complexity of the problem. It is entirely possible that in certain intellectual tasks the senile and psychotic groups are similar, and that in others they differ. The use of poorly standardized psychometric techniques, unequal sampling of intellectual performance at different levels, lack of adequate diagnostic definition of groups of patients, and failure to control the factor of chronological age—all of which characterize some of the earlier studies—make it difficult to evaluate the conflicting results. Moreover, comparison of groups in terms of mean raw scores depends heavily upon the general level of performance of the groups and overlooks the importance of intra-individual variability on the tests used. Some form of deviation score, such as is apparently the basis of Wechsler's signs, would define less equivocally the pattern of success and failure characteristic of certain disorders.

The present paper is an attempt to circumvent as many of these difficulties as possible and to examine specifically the relationship between the intellectual functioning of schizophrenic and parietic patients and that of older, non-psychotic subjects. The study affords evidence that these groups may be differentiated on certain of the tests used and that the established differences among the groups represent primarily a premature appearance of changes which would be expected in the normal course of aging.

PLAN OF THE INVESTIGATION

Consideration of the techniques used in previous research cited above led to certain conclusions concerning the type of tests most appropriate in attacking the present problem. The existence of norms of performance for non-psychotic adults is essential to a comparative study. The use of a point scale rather than the more usual age scale is valuable in assuring an equal sampling of the various types of behavior for all subjects. Raw scores on the different tests should be either directly comparable or capable of conversion to standard score form for purposes of comparison. Inter-test correlations should be relatively low. The tests should be capable of producing responses from more or less inaccessible psychotic patients. Finally, it is desirable that continuity of effort be maintained, so far as practicable, through the use of tests which have already been applied in previous studies.

On the basis of these criteria, the eleven tests which comprise the Wechsler-Bellevue Adult Intelligence Scale (19) were selected for use. This point scale provides a battery of comparable tests, each composed of a series of items ranging from very easy to very difficult, standardized on an adult population, presenting fairly low intercorrelations, and applicable to psychotic patients. Of the eleven tests, six are verbal: information, comprehension, arithmetic reasoning, digit repetition, similarities, and vocabulary; and five are performance: picture completion, picture arrangement, object assembly, block designs, and digit-symbol substitution. These tests yield raw scores which have been converted by Wechsler to standard scores so that the results from all the tests are directly comparable.

In addition to performance on the eleven tests, an indication of the more qualitative aspects of the patients' behavior was secured through the use of a five-point rating scale, covering such variables as attitude toward test, effort, preoccupation, relevance of speech, etc. Ratings on these ten variables were made for each patient at the close of the testing period.

Psychotic subjects for the study were 120 hospitalized patients,¹ 80 diagnosed schizophrenia, 40 diagnosed psychosis with general paresis. Since a comparison of psychotic performance with that of older non-psychotics was sought, the age range of the psychotic group was restricted and includes only subjects who, at the time of

¹ The writer is grateful to Supt. E. W. Mullen of the Agnew State Hospital and to Supt. G. M. Webster of the Patton State Hospital for permission to examine patients in these institutions.

testing, had passed their thirtieth birthday but had not reached their forty-first birthday. The mean age of the schizophrenic group was 35.7 years; of the parietic group, 35.2 years. Only those patients are included in the present report who were born in the United States, who were of white race, whose background gave no indication of possible language handicap, and whose physical and mental condition, as judged by the medical record and the statement of ward physicians, permitted of cooperation in the tests. Patients whose diagnoses were questionable or whose case histories suggested the presence of primary mental deficiency were eliminated. The group reported here contains no case where conflicting diagnoses have been made at various times or where the classification "psychosis with mental deficiency" has ever been used.

The control group with which the test performances of the psychotic patients have been compared is composed of the age groups 30 to 39 in the Wechsler standardization population. Mean scores and standard deviations for each of the eleven tests on the scale were available for 210 subjects, 100 aged 30-34, 110 aged 35-39.²

Patients were examined singly by the writer in a private room on their respective wards. All responses to test items were recorded verbatim. Directions for administering and scoring the tests were followed exactly as given by Wechsler (19, 165-207). All tests were scored twice, and certain crucial questions regarding doubtful cases of procedure and scoring were referred to Wechsler for final ruling. The decision to make no allowance in scoring and procedure for the psychotic condition of the subjects was based upon a consideration of the purpose of the present research. Had the aim been to obtain a clinical estimate of the patients' prepsychotic intellectual level, certain modifications in procedure and leniencies in scoring might have been justified. On the contrary, however, the purpose here has been to obtain results which are strictly comparable to those secured with the standardization group of normal adults. This, of course, requires the duplication, as nearly as possible, in the present testing of the controlled conditions which were maintained with the standardization group.

DISCUSSION OF RESULTS

When mean standard scores on each of the eleven tests for each of the three groups are compared, the psychotic groups fall below

² These data, which were not published at the time of the study, were kindly made available by Professor Wechsler.

the non-psychotic group on every test, with the paretics consistently lower than the schizophrenics, as shown in Table 1. The mean of all eleven tests for the non-psychotic group is 9.5, as compared with 6.6 for the schizophrenics and 5.2 for the paretics. In explanation of the striking inferiority of the performance of the two psychotic groups on all eleven tests, it may be argued either that the psychotic groups were below average in intellectual level before the onset of

TABLE 1

MEANS AND STANDARD DEVIATIONS OF DISTRIBUTIONS OF STANDARD SCORES

	SCHIZOPHRENICS			PARETICS			NON-PSYCHOTICS		
	N	M	σ	N	M	σ	N	M	σ
Information	80	8.1	3.4	41†	6.3	3.2	210	9.8	3.2
Comprehension	80	6.0	3.5	41	5.5	3.2	210	9.7	3.3
Arithmetic	80	5.4	3.9	41	4.0	3.8	210	9.2	3.4
Digits	80	6.6	2.6	41	4.6	2.7	210	8.9	3.2
Similarities	80	6.8	4.0	41	4.4	3.5	210	9.5	2.9
Vocabulary	74*	8.5	2.7	41	7.2	2.6	210	9.8	3.2
Picture Completion	80	5.8	3.7	40	5.6	3.3	210	9.3	3.4
Picture Arrangement	80	5.4	3.2	40	4.8	3.1	210	9.0	3.3
Object Assembly	80	7.4	3.6	40	5.1	3.3	210	9.2	3.2
Block Designs	80	7.2	3.5	40	5.2	3.3	210	9.4	3.4
Substitution	80	5.2	2.9	40	4.1	2.5	210	9.2	3.3
Mean of Eleven Tests	80	6.6	2.7	40	5.2	2.3	210	9.5	2.1

*In the case of six patients obtained from the Stanford Hospital vocabulary tests had not been administered.

†The parietic group includes one patient who, because of poor vision, was unable to perform the last five tests, but whose scores on the first six are included here.

the disease, or that, owing to the effects of the disease, either temporary or permanent, the psychotic groups are now functioning below their prepsychotic intellectual level. When the data relevant to this point are examined, some interesting relationships appear.

A comparison of the educational level of the psychotics with that of the Wechsler standardization group for this age reveals that the median education of the paretics and of the non-psychotics falls at the eighth-grade level, while the median education of the schizophrenics is slightly higher, falling at the second year of high school. If educational achievement may be accepted as a rough indication of prepsychotic intellectual level, then there is evidence in these comparisons that impairment of intellectual function has taken

place among the psychotic subjects. A further fact casts some doubt upon this interpretation, however. Previous studies with both psychotics and seniles (1; 2; 10; 12) have emphasized that vocabulary is least affected by deteriorative processes. If this is true, and if the lower scores of the two psychotic groups in the present study are due to temporary or permanent deterioration, then it would be expected that the mean score of the psychotic groups would approach closely the mean score of the non-psychotics in the vocabulary test. Such is not the case. As compared with the mean score of 9.8 for the non-psychotic subjects on the vocabulary items, the

TABLE 2

MEANS AND STANDARD DEVIATIONS OF DISTRIBUTIONS OF DEVIATION SCORES *

	SCHIZOPHRENICS		PARETICS		NON-PSYCHOTICS	
	MEAN	σ	MEAN	σ	MEAN	σ
Information	+1.5	1.9	+1.1	1.6	+0.5	2.4
Comprehension	-0.6	2.0	+0.3	1.8	+0.4	2.5
Arithmetic	-1.1	2.3	-1.2	2.4	-0.2	2.6
Digits	+1.0	2.3	-0.6	2.1	-0.4	2.8
Similarities	+0.2	2.4	-0.8	2.2	+0.1	2.0
Vocabulary	+2.0	1.6	+2.1	1.5	+0.5	2.4
Picture Completion	-0.8	2.2	+0.4	1.7	0.0	2.7
Picture Arrangement	-1.2	2.1	-0.3	1.6	-0.3	2.7
Object Assembly	+0.9	2.6	+0.1	2.5	-0.1	2.9
Block Designs	+0.6	2.1	0.0	1.6	+0.1	2.4
Substitution	-1.3	1.9	-1.0	1.9	-0.1	2.4

* A plus value signifies that the mean value of the single test is above the mean of all eleven tests; a minus value signifies that the mean value of the single test is below the mean of all eleven tests.

paretics obtain a mean score of 7.2 and the schizophrenics a mean score of 8.5. The data obtained in this study are hence not sufficient to warrant any positive conclusion regarding the reasons for differences in standard scores.

These differences in mean standard scores, however, render ambiguous a direct comparison of the three groups in terms of standard scores on single tests. Furthermore, the basic problem in the present study is one of *intra*-individual differences in intellectual functioning—the identification of tests in which each patient scores characteristically high or low relative to his own general level of performance. For this reason, further analysis of the data has been

made in terms of deviation scores. These scores express each subject's deviation on each test from the mean of his own scores on all eleven tests. The patient's own mean score has been selected as the point of reference, since the fundamental question is not how scores on the eleven tests differ from the mean score of some arbitrarily selected group, but rather how the test scores of schizophrenic and paretic patients, considered individually, characteristically fluctuate.

Basic constants for the distribution of deviation scores are presented in Table 2. The relationships involved, however, may be

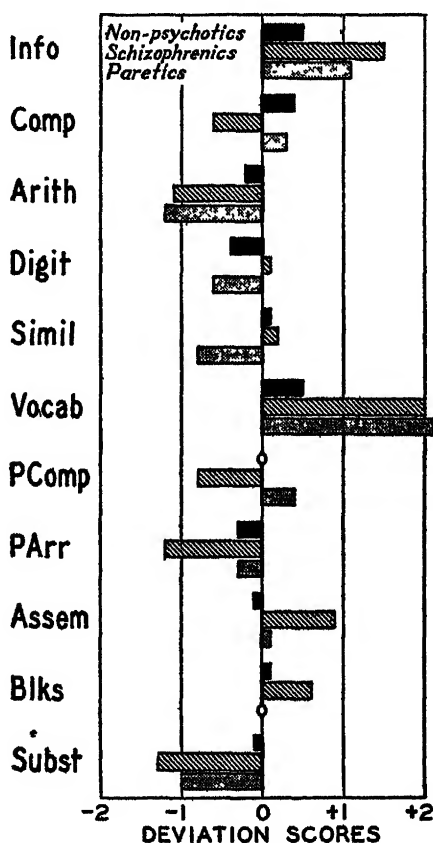


FIG. 1. MEAN DEVIATION SCORES OF SCHIZOPHRENICS AND PARETICS, COMPARED WITH NON-PSYCHOTICS

A plus value for a deviation score indicates that the mean score of the single test is above the mean score of all eleven tests; a minus value for a deviation score indicates that the mean score of the single test is below the mean score of all eleven tests. Note the greater variability in performance for the two psychotic groups, as contrasted with the non-psychotics, shown in the wider fluctuation of scores around zero. The difference is more marked for some tests (*e.g.*, vocabulary, information) than for others (*e.g.*, digit repetition, block designs).

seen more clearly in Figure 1, which presents bar diagrams showing deviation scores for the three groups. Inspection of this figure reveals at once the wider fluctuations of deviation scores around zero for the two psychotic groups than for the normals. Since these scores represent deviations from a mean, they are in themselves one measure of variability and represent the relative consistency of performance of the subjects on different tests. When the arithmetic sum of these mean deviation scores is calculated, to provide an over-all estimate of general variability of performance, the values

TABLE 3

CRITICAL RATIOS OF THE DIFFERENCES BETWEEN GROUPS IN MEAN DEVIATION SCORES

	SCHIZOPHRENICS VERSUS NON-PSYCHOTICS			PARETICS VERSUS NON-PSYCHOTICS		
	D_M	σ_{D_M}	D/σ_{D_M}	D_M	σ_{D_M}	D/σ_{D_M}
Information	1.0	0.27	3.8	0.6	0.31	2.0
Comprehension	1.0	0.29	3.5	0.1	0.33	0.5
Arithmetic	0.9	0.31	2.9	1.0	0.42	2.4
Digit Repetition	0.5	0.32	1.6	0.2	0.38	0.5
Similarities	0.1	0.30	0.3	0.9	0.37	2.4
Vocabulary	1.5	0.25	6.0	1.6	0.29	5.6
Picture Completion	0.5	0.31	2.6	0.4	0.33	1.2
Picture Arrangement	0.9	0.30	3.1	0.0	0.31	0.0
Object Assembly	1.0	0.35	2.9	0.2	0.45	0.5
Block Designs	0.5	0.29	1.8	0.1	0.30	0.3
Digit-Symbol Substitution	1.2	0.27	4.5	0.9	0.34	2.6

are found to be 2.7 for the normals, 7.9 for the paretics, and 10.3 for the schizophrenics. This furnishes confirmatory evidence of the greater variability of psychotic performance which has been noted in earlier studies (8; 9; 12; 13; 14; 17; 18; 20).

In addition to differences in over-all variability between the groups, the existence of wide discrepancies between the groups in deviation scores on single tests is apparent from Table 3. If the value of 3.0 for the ratio D/σ_D is used to indicate a statistically significant difference, then seven of the tests may be accepted as differentiating between schizophrenics and non-psychotics (information, comprehension, arithmetic, vocabulary, picture arrangement, object assembly, and digit-symbol substitution), and one between paretics and non-psychotics (vocabulary). In addition, the

picture completion test may possibly differentiate between schizophrenics and non-psychotics (critical ratio 2.6), and the digit-symbol substitution test may possibly differentiate between paretics and non-psychotics (critical ratio 2.6). Since the other tests have not proved capable of differentiating reliably between the groups studied, it must be concluded that the aspects of intellectual functioning measured by these tests do not differ significantly in the three groups.

It will be noted that the results from the 80 schizophrenics aged 30-40 reported in the present study differ in certain respects from those reported by Rabin and Wechsler for schizophrenics, using the same tests. Direct comparisons of these studies with the present are not possible, since the reliabilities of differences between the psychotic and non-psychotic subjects are not reported for single tests. As far as can be determined, these two studies and the present one agree in pointing out the relative superiority of schizophrenic patients on tests of vocabulary and information, and the relative inferiority of such patients on tests of digit-symbol substitution, picture arrangement, and picture completion. In the remaining four tests which differentiate significantly between the schizophrenic and non-psychotic groups in the present study, the three investigations disagree. The present study confirms Wechsler's clinical impression that schizophrenics are relatively poor in arithmetic, but thereby disagrees with Rabin, who reports a rank of 3.5 for arithmetic scores of the selected schizophrenics from whom his conclusions are largely drawn. The present study differs from both previous investigations in finding relative superiority in scores on the object assembly test and relative inferiority in scores on the test of comprehension. It is possible that these discrepancies are related to the factor of chronological age, which was apparently uncontrolled in Wechsler's development of diagnostic signs and was restricted in Rabin's study of the nineteen selected schizophrenics within considerably lower limits than in the present investigation. The question of chronological age deserves further consideration.

So far, the results presented indicate that differences in deviation scores exist between schizophrenic, parietic, and non-psychotic groups of similar ages in certain of the tests. The basic problem of the present study, however, is whether or not the characteristically low and high scores of the psychotic groups parallel the scores obtained by non-psychotic subjects of older ages. Accordingly, the

scores of the subjects aged 20-29, 30-39, and 40-49 in the Wechsler standardization population have been converted to deviation score form and are compared with the deviation scores of the two psychotic groups, aged 30-40, in Table 4.

Changes in deviation score with increasing age are apparent from the table, changes which, for the most part, parallel the characteristically high and low deviation scores in the two psychotic groups. In the case of the schizophrenics, six of the eight tests which reliably differentiate this group from the normals (vocabulary, information,

TABLE 4

MEAN DEVIATION SCORES FOR NON-PSYCHOTICS, AGED 20-49, AND FOR TWO PSYCHOTIC GROUPS

	20-29	30-39	40-49	SCHIZOPHRENICS	PARANOID
Information	+0.1*	+0.5	+0.9	+1.5†	+1.1
Comprehension	+0.2	+0.4	+0.9	-0.6†	+0.3
Arithmetic	-0.4	-0.2	+0.2	-1.1†	-1.2
Digit Repetition	-0.2	-0.4	-0.5	+0.1	-0.6
Similarities	-0.1	+0.1	+0.6	+0.2	-0.8
Vocabulary	+0.1	+0.5	+0.9	+2.0†	+2.1†
Picture Completion	-0.1	0.0	-0.3	-0.8†	+0.4
Picture Arrangement	+0.2	-0.3	-1.1	-1.2†	-0.3
Object Assembly	-0.1	-0.1	0.0	+0.9†	+0.1
Block Designs	+0.3	+0.1	-0.7	+0.6	0.0
Digit-Symbol Substitution	+0.4	-0.1	-1.2	-1.3†	-1.0†

* A plus score indicates that the score on the test is above the mean; a minus score indicates that the test falls below the mean.

† Tests for which statistically significant differences in deviation scores between psychotics and normals have been established.

picture completion, picture arrangement, object assembly, and digit-symbol substitution) show deviations in the direction demonstrated to obtain in normals with increasing age. The relative position of the arithmetic reasoning test on this profile is the same for the schizophrenic group and for all three non-psychotic groups. In the former group, final position of the arithmetic score is below the mean, in contrast to its position in the oldest non-psychotic group, but no genuine departure from the trend with age has occurred. In the test of comprehension, however, the scores of the schizophrenic group are at variance with those occurring with increasing age. The conclusion seems inescapable that the type of practical judgment measured by the comprehension test is characteristically

impaired in schizophrenia, while it is preserved apparently intact in age groups through 49 years.

In the case of the paretics, both of the tests (vocabulary and digit-symbol substitution) which reliably differentiate this group from the normals show deviations in the direction demonstrated to obtain with increasing age.

Table 4 furnishes evidence, then, that in those aspects of their behavior measured by the significantly differentiating tests, schizophrenic and parietic patients resemble older, non-psychotic subjects. The exception which has occurred in the schizophrenic performance on the comprehension test (and this is likewise an exception to the studies of Rabin and of Wechsler) is in harmony both with the classical description of this disease syndrome and with previous studies of schizophrenic thought and language. The looseness of the schizophrenic thought processes, the increasing independence of name from object, of symbol from the concept represented, the general withdrawal of interest from the environment, the tendency toward depersonalization of stimuli—all these typically schizophrenic reactions suggest that when a schizophrenic patient is confronted with a question of practical judgment his response will be inferior. Cameron (4; 5) has called attention to the particular difficulty which questions involving causation present to the schizophrenic. Seven of the ten questions on the comprehension test used in the present study begin with "Why?"; the other three involve personal reference to the patient: "What should *you* do if . . . ?" Cameron has also pointed out that schizophrenic thought in situations involving causal relationships is not qualitatively similar to that seen in deteriorated senile patients, a finding toward which the present results likewise point. The apparent exception demonstrated in the present study, then, becomes comprehensible if interpreted as a manifestation of the type of thought process which has been established as peculiar to the schizophrenic syndrome.

This finding of the parallel between the performance of psychotics and that of older non-psychotics seems at first glance to contradict the opinion of Rabin (15, 97) that the pattern of schizophrenia is "entirely different" from that observed in older normals. When the ranks obtained on the tests by his nineteen schizophrenics are compared with the ranks obtained by Wechsler's standardization group aged 40-49, however, the two groups achieve identical ranks

in tests of information, comprehension, and picture completion, and differ by one rank only in tests of arithmetic, digit repetition, and digit-symbol substitution. From this rather rough comparison, it appears that at least some similarity exists between the pattern obtained by Rabin for his schizophrenics and that characteristic of the older age group 40-49 in the standardization population.

SOME POSSIBLE EXPLANATIONS

What underlying factors may account for the similarity in pattern of high and low deviation scores found in this study between the two psychotic groups and the older, non-psychotic group is the next logical question. Three hypotheses might be advanced to account for the results: (1) that the differences in test scores result from the imposing of time limits on some of the tests; (2) that the differences in test scores reflect differing degrees of motivation on the part of the subjects during the test period; (3) that the differences in test scores result from the similar effects of psychosis and age upon the hypothetical mental abilities isolated through factorial analysis. The evidence relating to each hypothesis will be considered briefly.

1. It might be argued, in the first place, that the characteristic patterns of the three groups result from the imposing of time limits on some tests and not upon others. Six of the eleven tests on the Wechsler-Bellevue scale set time limits for responses or provide extra credit for speed. Since schizophrenics and older normals have often been described as unable to evoke materials for use, lacking in thought control, blocked in forming new associations or in making use of old, it might be expected that these groups would be lower in deviation scores on the timed tests. This is not consistently true of the groups reported here, however. The older, non-psychotic subjects show a relative increase in scores on the timed arithmetic test and a relative decrease in scores on the untimed digit-repetition test. The schizophrenics show a decrease in scores on the untimed comprehension test and an increase in scores on the timed object assembly test. Both tests which reliably differentiate paretics from non-psychotics show deviations in the direction predicted by the hypothesis: a decrease in the timed digit-symbol substitution test and an increase in the untimed vocabulary test. It seems reasonably clear, therefore, that although these three groups are lower on certain of the timed tests there are sufficient

exceptions to suggest that the fundamental explanation of the demonstrated differences does not lie in simple speed of response.

2. A second possible hypothesis is that the differences in test scores are related to the differential effects of motivation. Motivating psychotic and senile patients in a test situation is so difficult that it might be expected that, among the most poorly motivated patients, the demonstrated differences are intensified, and among the best motivated patients the differences disappear or are minimized. An attempt to test this hypothesis has been made by subdividing the two psychotic groups according to their ratings on item 3 of the rating scale which describes the effort exerted by the subject in the test situation. Mean standard scores and mean deviation scores of all patients whose ratings fell in the lower three categories of the scale were computed separately and compared with the mean deviation scores of the patients whose ratings fell in the upper two categories. The former, low-effort group of patients includes 14 paretics and 22 schizophrenics. The latter, better-motivated patients include 22 paretics and 39 schizophrenics. Similar analysis of the non-psychotic subjects could not be made, since the ratings were of course not used during the standardization of the tests.

That this division according to the ratings actually produced two groups differing in effort is shown by a comparison of the mean standard scores of the two groups, which reveals that the low-effort group is consistently and reliably below the high-effort group on every test of the scale. When the basic question of intra-individual variability is considered by comparing the mean deviation scores of the two groups, however, the two groups closely parallel one another, as shown by the bar diagrams in Figure 2. There are but two deviations between the groups which are in the direction predicted by the hypothesis: the poorly motivated schizophrenics fall appreciably below the well-motivated schizophrenics on the picture arrangement test, and the poorly motivated paretics fall well below the well-motivated paretics on the object assembly test. All other differences between the groups are in the opposite direction from that predicted by the hypothesis. It might be argued, then, that in two of the tests differences in deviation score have resulted from differences in motivation. The effects of motivation, however, cannot be entirely separated from the effects of the disease process. The poorly motivated, preoccupied, apathetic, or distractible patients may well be those in whom the disease¹⁴ has reached a later stage and in whom the differences in deviation scores might be expected

to be greater if these differences resulted from the disease alone. In any case, the hypothesis that the differences between the groups result from the differential effects of motivation is not convincingly substantiated in the case of the psychotic subjects.

3. A third possible explanation for the similarity in pattern of scores between these psychotics and older normals is that psychosis

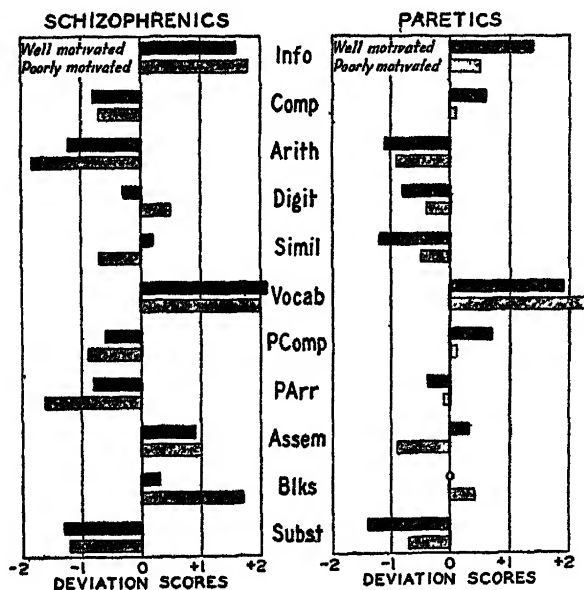


FIG. 2. MEAN DEVIATION SCORES OF PSYCHOTICS DIFFERING ON RATING FOR EFFORT

Subjects obtaining ratings of 1 and 2 on effort exerted in the test situation were designated "well motivated." Those obtaining ratings of 3, 4, and 5 on effort were designated "poorly motivated." The schizophrenic group includes 39 well-motivated and 22 poorly motivated patients. The paretic group includes 22 well-motivated and 14 poorly motivated patients. Note the general similarity between profiles for the well-motivated patients and profiles for the poorly motivated patients.

and age have similar effects upon hypothetical mental abilities, isolated statistically through factor analysis. A factor analysis of the Wechsler-Bellevue scale by Balinsky (3) identified three factors from the performance of 121 adults aged 35-44; memory, for which information, arithmetic, digit repetition, and digit-symbol substitution tests have significant loadings; performance, for which picture completion, picture arrangement, object assembly, block designs, and arithmetic tests have significant loadings; and verbal relations, for which comprehension, information, arithmetic, digit repetition, and picture completion tests have significant loadings.

If these factors represent circumscribed, independently functioning abilities, then it might be expected that they would be characteristically affected by psychosis and by increasing age.

This hypothesis may be examined by comparing those tests which are typically low and high in the three groups with those which comprise the three factors. When this is done, the hypothesis is not convincingly substantiated. As would be expected from impairment of the abilities comprising the memory factor, these two groups show a relative inferiority in arithmetic and digit-symbol substitution, but a striking superiority in information, which would not be expected. They tend to be low in arithmetic reasoning, picture completion, and picture arrangement, as would be expected from the impairment of abilities comprising the performance factor, but, contrary to expectation, tend to be high in object assembly and block designs tests. They tend to be low in arithmetic reasoning and picture completion, as would be expected if the verbal factor were affected, but tend to be high in information and digit span.

No better verification of the hypothesis is obtained in the case of the paretics. These patients score higher in information than would be expected if the memory factor were involved, higher in picture completion and block designs than would be expected if the performance factor were impaired, and lower in arithmetic reasoning and digit span than would be expected if a special resistance of the verbal factor to the effects of the disease were being demonstrated.

The failure of the present investigation to meet the requirements of an hypothesis derived from factorial methods is of considerable theoretical interest. From the standpoint of the theory of mental organization, it indicates that, in the case of the Wechsler-Bellevue scale, tests which appear on statistical grounds to comprise circumscribed factors or abilities, and which might therefore be expected to be similarly affected by changes in mental state, do not act in consistent fashion in the presence of major mental disturbance or of increasing age. It should be borne in mind, however, that this statement is based upon the results of only one factorial study. This particular study, furthermore, involves too few cases to make its conclusions altogether convincing. A more complete factor analysis of the Wechsler-Bellevue scale would provide a fairer basis for examining the effect of mental disturbance upon the factors.

It seems apparent from the foregoing analysis, then, that the similarity in test pattern between psychotics and older non-

psychotics cannot be explained in terms of speed of response, differential effects of motivation, or similar effect of age and psychosis upon hypothetical, statistically isolated mental abilities. These are but three of the numerous hypotheses which might be advanced to account for the obtained similarities. In fact, the present investigation, limited as it is to one age range and two psychoses, represents only the beginning of an attack upon the problem of similarity between senility and psychosis. The systematic extension of the analysis to older age groups and other psychoses, as well as comparisons with non-psychotics who may be described as senile rather than pre-senile, is necessary before any general statement of the relationship can be made or any of the factors causing the similarity identified. Further studies may profit from the use of the deviation score employed in the present investigation. Until these studies have been made, however, the only justifiable conclusion would seem to be that certain tests of the Wechsler-Bellevue scale are sensitive to those changes in the organism which occur similarly with schizophrenia, general paresis, and increasing age.

SUMMARY

In an effort to determine whether any similarity exists between the behavior of psychotic patients and that of non-psychotics of older age, scores on the eleven subtests of the Wechsler-Bellevue Adult Intelligence Scale were obtained for 120 psychotic patients aged 30-40, 80 schizophrenics and 40 paretics. These scores were converted to deviation form and compared with scores obtained from 210 non-psychotic adults of the same age, part of the standardization population of the Wechsler-Bellevue scale. Eight of the tests were found to differentiate between schizophrenics and non-psychotics (information, comprehension, arithmetic reasoning, vocabulary, picture completion, picture arrangement, object assembly, and digit-symbol substitution). Two of the tests were found to differentiate between paretics and non-psychotics (vocabulary and digit-symbol substitution).

The performance of the two psychotic groups on the differentiating tests was then compared with that of non-psychotics of three age ranges: 20-29, 30-39, and 40-49, again part of the Wechsler standardization group. In all tests but one (comprehension), the psychotic groups deviated from the non-psychotics of similar age in the same direction as the older non-psychotics deviated from the

younger non-psychotics. In the comprehension test, the schizophrenic group differed from the non-psychotic in the direction expected from the nature of the schizophrenic syndrome rather than from increasing age.

Further analysis of the results suggested that the similarity of score pattern between these psychotics and older normals could not be related to the imposing of time limits on certain of the tests, to the differential effects of motivation, or to the similar effect of age and psychosis upon statistically isolated factors or mental abilities. Until further studies have been made, the only conclusion warranted is that certain tests of the scale are sensitive to whatever changes in the organism occur similarly in schizophrenia, general paresis, and increasing age.

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THE VERBAL SUMMATOR TECHNIQUE AND ABNORMAL MENTAL STATES *

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INTRODUCTION

THERE has been considerable interest during the last five years in the possible application of the verbal summator technique suggested by Skinner (4) to the study of personality problems, particularly those which are more serious in nature, including the psychoses. Briefly, the verbal summator [or tautophone, as it has been renamed by Shakow (2)] is a device for repeating small samples of elemental speech sounds in such a way as to elicit a verbal response from the listener. On a phonograph disc are recorded series of different vowel patterns variously accented which, when played at a very low intensity and repeated as often as necessary, can be rather easily perceived as actual spoken words. In the presentation of the sounds to a subject an attempt was made to maintain an illusion of genuine but indistinct or distorted speech in order to facilitate the responses.

Thus, the summator is a device for calling up verbal responses determined partly by the stimulus pattern presented and partly by the individual making the response. The possibility then exists of detecting the presence and direction of influence of the personality variable. The value of this possibility rests, of course, upon the ability of the test to bring out personality factors, presumably by differentiating between individual or group tendencies in the predominate or strong "latent" associations of the subjects or in other characteristic manners of response to the stimuli presented. The test is generally regarded as being of the so-called projective type.

To check on the above-indicated function of the test, one of the possible methods is to compare the responses of personalities known to vary greatly in terms of such associative and response factors.

* This study was directed by Wendell Johnson. The writer is grateful to Dr. Andrew H. Woods, Director, Iowa State Psychopathic Hospital, for permission to use patients in the hospital, to Dr. Jacques Gottlieb, admitting physician at the same hospital, for selection of subjects and many helpful suggestions, and to David Shakow for permission to use certain indices

At least two attempts have yielded results in this direction. Shakow (2) has made a comparison of the responses of normal controls with those of patients suffering from schizophrenia through the use of certain indices which will be considered later in this paper. He found significant differences between the hebephrenic patients and normals in measures of "contact," "objectivity," and "egocentricity," and equally definite differences between the normals and the schizophrenic group as a whole in the number of responses failing to lie close to the stimulus pattern for various classes of sentence-structure responses. He also found a larger number of non-English responses among the schizophrenic patients, including a larger degree of apparent meaning attached to such non-English responses as were given.

In a study in which small samplings of subjects with various mental disorders were used, Trussell (5) found general differences between normals and abnormals in respect to the number of meaningless responses and the number of "main ideas" revealed by the responses. The psychotic patients in this case had relatively fewer such "main" ideas, but such as were present occupied more of the individual's attention than did those of the normal subjects. Here, measures of formal and thematic perseveration and number of ego-centric responses gave insignificant differences between the groups.

While these two studies by no means definitely substantiate the value of this test in personality study, they do indicate trends which for the time being appear at least promising. Evaluation of their results is made difficult by the lack of standard measures and scoring methods, and the general "newness" of the technique.

PROBLEM

The differences which have been found to exist, particularly in the comparison of schizophrenic patients with normal subjects, seem sufficient to warrant a comparison of responses between different groups within the class of disordered personalities. If the test were ever to be employed as a diagnostic instrument, an ability for differentiating between classes of abnormal personalities might be one of the requisites. To perform a preliminary investigation of such possibilities with the summator was the purpose of this experiment.

Three specific groups of patients suffering from mental disorders were given the test in an effort to determine what differences in

responses might exist, both between individuals and between groups. Comparisons were relatively exploratory in nature in the sense that mere response differences were sought for the purpose of evaluating this technique as a method for the study of personality factors.

PROCEDURE

Subjects. The groups selected for comparison include 24 individuals suffering from schizophrenia, 18 from psychoneuroses, and 15 from manic-depressive psychosis, depressed phase. Age mean of the schizophrenic patients was 26 years with an average deviation of 5 years, for the psychoneurotic patients 29 years (AD of 5.5) and for the depressive patients 44 years (AD of 8). Of the first group 14 were male while in the last two the males numbered 6 and 9, respectively. All patients were of the same hospital (Iowa State Psychopathic Hospital), and all were diagnosed definitely on grounds other than the verbal summator data. Testing was done in a private room adjoining the wards by a single experimenter throughout a period of several months.

Administration of Test. Twenty-eight samples were administered to each subject from Skinner's phonograph records 5 AM and 6 AM, and the response to each sample was identified by the number corresponding to the order of its occurrence on the record. Verbatim responses were recorded, as was also the number of repetitions of the stimulus required to elicit each response. Other characteristics in the responses, such as overt reactions, were recorded only when they seemed to have particular relation to the specific response or to the test situation in general.¹

Instructions to each subject were administered orally as follows: "I have here a phonograph record upon which a man is talking. He is not speaking very plainly, but if you listen carefully you will be able to tell what he is saying. I'll play it over and over again so that you can get it, but be sure to tell me as soon as you have an idea of what he is saying." The subject was seated about eight feet from the phonograph and facing it. In only a few cases was there any difficulty in maintaining the illusion of actual speech.

For the sake of comparison of the results of the present study

¹ One note seems necessary in relation to the record of the number of repetitions required. On these new records in which the samples are repeated ten times in a series on the record and then, if necessary, the entire series is repeated again by hand, the tally of one repetition really means a series of ten presentations of the stimulus pattern.

with those of Shakow (2), and since his is the most adequate scoring method yet suggested for this device, we have made nearly complete use of his system as it is put forth in the reference quoted above. In respect to the formal nature of the responses, the considerations made include:

1. The complexity of structure of the sample—Was it composed of syllables (SY), meaningful words (WM), non-meaningful words (WN), phrases (P) or sentences (S)?²

2. Similarity of the responses to the sample—How closely did the response phonetically resemble the stimulus pattern? Was it close to it (c) or remote (r) from it?

3. Non-English nature—Was the response in English, or was it a foreign word or a neologism; and what proportion of the response was either (whole or just part)? If the response was neologistic, did the subject appear to assign meaning to it?

4. Personal reference—If personal reference was present in the responses, was it first (1), second (2), or third (3) person? Samples without personal reference are designated (4).

5. Grammatical structure of the sentences which occur—Were they interrogative (?), imperative (!) or declarative (.)?

From this classification of responses several indices, besides the scores representing the number or proportion of responses falling into each group, were derived. All were constructed according to the general formula $\frac{x-y}{x+y}$ in order to give comparable ranges, in this case from -1.0 to 1.0.³ The indices follow:

1. Index of "suggestibility," which consisted of the relationship of the number of sentence and phrase responses to the number of syllable responses; or $\frac{(S+P)-SY}{(S+P)+SY}$. This index may be assumed to indicate the degree of acceptance by the subject of the suggestion in the instructions that the samples are actually spoken words.

² It should be mentioned here also that in classifying responses in the fashion noted above, an effort was made to adhere closely to the general rule followed by Shakow (2), "that when a choice was possible, the 'higher' of the classifications was selected, e.g., S in preference to P, W in preference to SY etc."

³ For a fuller account of this scoring system note reference (3). There the reasons for the construction and selection of each index are discussed at greater length, but for our purpose mere mention of the nature of each is sufficient. However, at least two questions should be raised regarding the use of the general formula $\frac{x-y}{x+y}$ for the indices. First, is comparability of range the only advantage of such a usage and, secondly, would expression of the measures in some different form, such as simple percentages, give the same results? The answers to these questions are beyond the scope of this study but they should nevertheless be considered in interpreting the results.

2. Index of "contact," secured by relating the scores on the close and remote responses in the syllable and non-meaningful word categories only. Limitation to these classes was made because these responses, Sy and WN, were virtually repetitions of the stimulus pattern and therefore should represent it accurately if contact with the stimulus existed. The mathematical representation of the index was $\frac{(SYc+WNc)-(SYr+WNr)}{(SYc+WNc)+(SYr+WNr)}$, where SYc was the number of syllable responses lying close to the stimulus, SYr the syllable responses failing to adhere to the stimulus, etc.

3. The index of "human reference" related the responses referring to inanimate material to those with human reference, or $\frac{(1+2+3)-4}{(1+2+3)+4}$, where 1 equals the number of responses with first-person reference, 2 the number with second-person reference, etc.

4. An index of "self reference," constructed by comparing the responses with first-person reference to the sum of the responses with second- and third-person references, as: $\frac{1-(2+3)}{1+(2+3)}$.

5. The index of "subjectivity" was again a relation between the close and remote responses but this time in the phrase and sentence categories, as $\frac{(Pr+Sr)-(Pc+Sc)}{(Pr+Sr)+(Pc+Sc)}$. This measure was based partly on the assumptions that these meaningful phrase and sentence responses might or might not have been influenced by personal problems of the subject. If they had been so influenced, the degree of phonetic similarity of responses to the sample should also have been affected, resulting in greater possibility for the responses to lie in the remote category when personal problems intervene. This was regarded as a measure of the degree of subjective influence upon the responses, and called "subjectivity."

6. An index of "interrogativeness" was constructed from the relation between the sentences which were in question form and the total number of sentences, as follows: $\frac{? - S}{? + S}$.

Because of their auxiliary possibilities certain other methods of analyzing the responses were employed, as follows:

7. Percentage of non-meaningful responses.

8. Relative length of sample.

9. The number of repetitions required in securing the responses.

10. A measure of formal perseveration was obtained by dividing the number of different words used by the total number of words employed. This was essentially the Type-Token ratio used by Johnson (1) with the exception of the fact that these responses were not entirely "free" in the sense of being undetermined by the stimulus, and the fact that no effort could be successfully made to keep the samples the same length from patient to patient.

11. For perseveration of themes, a ratio comparable to the one above was constructed by dividing the number of different themes employed by the total number of meaningful responses.

12. Qualitative or content measures noted included a record of all "content" words persistently repeated throughout the test, a similar notation of all predominant perseverating themes and any unusual responses, such as blocking, etc. These

were recorded for their possible use as clues to dominating ideas of the subject. An effort was made to check most of these with case-history records for evidence of problems, conflicts, etc., and separate mention of this comparison will be made later

QUANTITATIVE RESULTS

General Treatment of Data. The results on both the structure of the responses obtained and the measures employed are presented in tabular form. Statistical treatment, where used, consisted essentially of the following: computation of Fisher's *t* values for evaluation

TABLE 1
STRUCTURE OF RESPONSES TO VERBAL SUMMATOR STIMULI

GROUP MEANS AND STANDARD DEVIATIONS					
MEASURE	SCHIZOPHRENIC	DEPRESSED	NEUROTIC	DIFFERENCE*	LEVEL OF SIGNIFICANCE† (Percentage)
Syllables (SY)	3.3±2.0	4.3±4.8	1.2±1.1 1.2±1.1	2.1 3.1	2 2
Non-Meaningful Words (WN)	.4±.64 .4±.64	0±0 0±0	.26±.58 .26±.58	.4 .26 .14	5
Meaningful Words (WM)	1.8±2.4	1.8±1.3	2.3±3.7		
Phrases (P)	11.0±3.9	11.4±4.1	10.2±3.2		
Sentences (S)	11.1±3.7	9.0±4.7	14.0±3.7	5.0	5

* Differences are not listed for comparisons of means in which the level of significance is less than 5 per cent.

† Level of significance of 1 per cent, etc., as here used refers to the fact that the probability of these observed differences in response means or variability being attributable to chance factors is 1 in 100. For further information regarding the techniques used in deriving these figures, the reader is referred to Lindquist, E. F., *Statistical analysis in educational research*. Boston: Houghton Mifflin, 1940, pp. 57 and 60.

ing the differences between means and testing of the significance of the differences in variability by the use of the Fisher *F* test.

Structure of the Responses. The grammatical structure of the responses yielded some suggestive trends, particularly in the syllable and non-meaningful categories. Group means, standard deviations, and comparisons between means are given in Table 1. There were no meaningless words used by the psychoneurotic patients as a group, while the schizophrenic patients presented an average of .4 such responses per subject. Significantly, the psychoneurotic

patients likewise gave less Sy responses than either of the other two groups.

These tendencies were consistent with results obtained on indices mentioned later, such as the relative lack of suggestibility of the depressed subjects together with their relatively frequent production of Sy responses. This relation was inescapable, since the suggesti-

TABLE 2

COMPARISON OF GROUP AVERAGES ON THE FIRST SEVEN MEASURES

GROUP MEANS AND STANDARD DEVIATIONS					
MEASURE	SCHIZOPHRENIC	DEPRESSED	NEUROTIC	DIFFERENCE *	LEVEL OF SIGNIFICANCE (Percentage)
Suggestibility		.60±.47	.90±.10	.30	2
	.74±.22		.90±.10	.16	1
Contact	.74±.22	.60±.47		.14	30
	.78±.33	1.00±0		.22	
Human Reference	.78±.33		.96±.14	.04	5
	.07±.28	-.07±.34		.14	30
Self Reference			-.02±.28		
	-.08±.41	-.07±.41	-.17±.33		
Subjectivity	-.66±.22	-.85±.14		.19	5
			-.75±.16		
Interrogativeness		-.57±.29	-.63±.26	.06	10
	-.71±.19				
Percentage Non-Meaningful	21.0±14.2	21.5±18.9	6.5±6.3	14.5	1

* Differences are not listed for comparisons in which the level of significance is less than 30 per cent.

bility measure was dependent upon the number of Sy responses. On the other hand, the relatively infrequent use of S responses by this group was supported by a general survey of the records, for there appeared to be at least a tendency for them to employ shorter responses and more of the isolated word type (note highest mean WM record). While neither of these latter tendencies was statistically significant, they may have indicated trends.

Group Comparisons in Terms of Specific Measures. The group means, standard deviations, and comparisons between means are given in Table 2. In respect to the measure of suggestibility the psychoneurotic subjects, with a mean of .90, showed the most

acceptance of the suggestion in the instructions that there were actual spoken words being reproduced, while the depressed subjects, with an average of .60, showed the most unwillingness to accept this illusion of speech.

An outstanding result of the measure of *contact* was the fact that no depressed subject possessed an Sy response in the (r) category, and the group had a perfect mean score of 1.0. When this was coupled with the fact noted before, namely that the largest mean number of Sy responses was from this group, it tended to signify an excellent degree of contact with the stimulus. The average for the psychoneurotic patients was nearly as good (M of .96), while among the schizophrenic subjects contact was relatively poor (M of .78).

TABLE 3

GROUP AVERAGES ON RESPONSE LENGTH, NUMBER OF REPETITIONS OF STIMULI, AND FORMAL AND THEMATIC PERSEVERATION

	LENGTH		REPETITIONS		FORMAL PLR.		THEM. PER. ⁿ	
	M	σ	M	σ	M	σ	M	σ
Schizophrenics	3.4	.45	1.7	.71	.64	.10	.84	.08
Psychoneurotics	3.4	.54	1.8	.54	.64	.10	.88	.14
Depressives	3.1	.71	1.7	.95	.68	.10	.89	.10

Results on the two measures of reference were not as indicative of group differences as the above. What small differences did exist might quite possibly be due to the operation of chance factors. The differences in *subjectivity*, particularly between the schizophrenic and depressed patients, were more suggestive in the direction of greater subjectivity in the former group. The last index, that of *interrogativeness*, gave smaller, less significant differences. A comparison of the schizophrenic subgroups, hebephrenics and paranoids, with the entire schizophrenic group yielded little of interest.

The proportion of meaningless responses gave a striking difference between the psychoneurotic subjects and the other two groups, both of which showed significantly larger numbers of non-meaningful responses.

Remaining measures, shown in Table 3, all failed to be discriminating. The average length of sample and the average num-

ber of repetitions of the stimulus required were nearly identical in all groups. The differences in formal and thematic perseveration were also practically negligible.

Summary of Results. Combining, then, the results of these observations we found the depressed patients to be quite unsuggestible but remaining in close contact with the stimulus. They exhibited a minimum of subjective influence in their responses with a maximum of interrogativeness. Their tendencies to human reference were the least of all groups tested. Their number of Sy responses was maximum for all groups as was their WM total, while the employment of sentences was minimal. Some non-meaningful words were present but not as many as was the case with the schizophrenic group. Only slight trends were seen with respect to shorter response length and minimal perseveration, both thematic and formal.

The schizophrenic patients, on the other hand, appeared moderately suggestible and considerably lacking in contact. Their subjectivity and human reference indices were perhaps the highest and their interrogativeness index was the lowest of the groups studied. In respect to length of response, repetitions of stimulus required, and formal perseveration they ranked quite close to the others, with perhaps a somewhat higher index for thematic perseveration. They gave a considerable number of neologisms and other meaningless responses and their proportion of Sy responses was quite high.

Suggestibility and contact were high among the psychoneurotic subjects, while both subjectivity and interrogativeness were moderate, this group having rated between the other two on these measures. This group was characterized by a significantly smaller percentage of meaningless responses than either of the other two. There was a complete lack of non-meaningful words in their reports, with a high number of sentences given and a minimum of syllables. In none of the other measures did they prove outstanding.

QUALITATIVE RESULTS

Overt Responses. In so far as the test situation was an unusual one, it seemed worth while to consider the general overt responses of the subjects to the task. In this respect the groups differed quite widely and characteristically, but it seems necessary to remember the fact that such overt responses might just as likely have occurred

in an ordinary psychiatric interview and hence were not strictly unique to the test situation. Nor did these responses show up typically in all instances but rather only in a majority of cases. However, such differences as did exist are presented for whatever value they might possess.

Most characteristic of the schizophrenic subjects were lapses of attention and unusual delay in responding, although in the hebephrenic patients the latter was often absent. As a group they were for the most part unconcerned and uninterested in the sense of not attacking their task directly. Such lapses of attention as did occur were usually accompanied by periods of blank staring at the experimenter, at the ceiling, or out the window. Often it appeared that the response words came to the subject as if "out of nowhere" and were accompanied by a degree of unfamiliarity to him, as was indicated partially by the fact that quite often such a patient was unable to repeat the response he had given after the stimulus pattern was stopped. This fact need not imply, however, that the responses were therefore not determined actually by the stimulus, for upon examination this particular type of reply was found to fit the stimulus pattern in most cases. This condition was almost entirely confined to the schizophrenic group, for the others acted as though directly toward the stimulus.

When the task of taking the test became unpleasant for the patient, the fact manifested itself differently in the various groups. While the schizophrenic patients usually lapsed into inattention or mere periodic concentration, the depressed subjects exhibited considerable concern for the difficulties they were having, often holding head in hands or shaking the head from side to side. They also showed tendencies to grumble or even move about under the "strain" of the task and frequently denounced the "nuttiness" of the sounds, etc. Thus, characteristically they displayed a resistance toward the experience, while the schizophrenic patients for the most part accepted it rather readily.

Typically enough, the attitudes of the psychoneurotic subjects varied widely. If there was any one trend that was most outstanding, it was that of skepticism and questioning. They usually showed a marked "What is this for?" attitude; and comments such as "Is this to see if I can go home?" or "Is this to see how good my hearing is?" were quite common.

In these respects it might be significant to note the number of failures, or patients who refused to complete the test, and the groups that they represent. Of the entire group of 62 psychiatric subjects tried only 5 were failed, of which 2 were schizophrenic, 3 depressed, and none psychoneurotic.

Content of the Responses. A second qualitative factor was that of the "content" of the responses. Ideally, as a diagnostic instrument the summator would bring forth indications of specific difficulties, problems, conflicts, complexes, etc., by means of the meaningful content of the responses. This should be true to some degree if the subject "projects his own personality into the responses," which is an implicit assumption of projective tests.

Unfortunately, it appeared that there was a minimum of such meaningful "content" in all the patients' responses. In an effort, however, to examine that which did appear, three factors were singled out and examined for possibly meaningful relation to the history and development of the case. They included, first, words upon which there was a great deal of perseveration; secondly, dominant themes, at least one of which was commonly present for each subject; and, finally, unusual responses, blocks, statements strikingly irrelevant to the stimulus, etc.

Two depressed subjects, both of whom showed consistent repetition of the word "God" and reference to the notion of "God," presented histories in which religious activities were featured considerably. One had been a church officer for 25 years, and the other sang in church choirs and belonged to many church groups. In the latter case the religious aspect was strengthened by the fact that the church groups were apparently the only ones with which the patient had identified herself to any degree.

Another, a schizophrenic patient, perseverating on "God" also, but even more on the word "Adam," revealed a history including a highly religious parental household, attendance at a sectarian college followed by several years of teaching there, and culminating in ministerial study. It was significant to note that no other subjects yielded this type of repetition and no others, with one exception, indicated in their histories a marked degree of religious attachment.

A word on which there was considerable and varied repetition was "love." While all of these cases responding with the word

"love" yielded evidences of sexual involvement, all of the subjects exhibiting such difficulties did not use the word "love" to excess in their verbal summator responses. Cases for whom perseveration on "love" was present included a psychoneurotic patient with anxiety over impotency, a hebephrenic patient with a background of promiscuity, a paranoid subject with delusions involving a past girl friend, and others.

The most striking example of extreme thematic perseveration was that of a male suffering from psychoneurosis who, for almost half of his responses, was concerned with ideas relating to "cars." His adjustment difficulties were related to fears and general discontentment connected with his position as a fireman, which he had held for nearly 20 years. For years it had been his specific duty to care for the engine.

"I believe in Freud and Spinoza," as a final response from a paranoid subject, proved to be completely and strikingly unrelated to the stimulus pattern. It was given in a defiant manner by the subject as if he were trying to inform the examiner of his acquaintance with the work of these men. His case history indicated a background of extreme egocentricity⁴ and withdrawal, including a tendency toward very extensive reading, possibly not too well selected or comprehended. In fact, his original reference by his parents was motivated by his peculiar withdrawing tendency to "sit around home and read rather than go to work."

The only truly vivid "block" was manifested by a paranoid individual who blushed, sputtered, and blocked for approximately three minutes on responding "Pull her hair" to sample No. 20. The only evidence obtainable from the patient's case records related to this response difficulty was the fact that the onset of his disorder centered around personal problems arising from worry after sexual intercourse with a girl.

These few examples mentioned are intended to be neither conclusive nor exhaustive. It is hoped rather that they may be suggestive of some of the possibilities for analysis existing in the test as well as of some of its more apparent limitations.

THE STIMULI

Since a very large portion of the responses on a test such as this were bound to be a direct result of the character of the various

⁴ It was interesting to note that this social-history report of egocentricity was supported by the fact that this subject possessed the highest self-reference score of all schizophrenic patients tested.

stimulus patterns, it seemed imperative that some mention of stimuli be made in any discussion of results. For this reason a very brief analysis has been made of the sound patterns used in respect to their unique contributions to the test, differentiating possibilities, etc., and it should be noticed immediately that the specific patterns differed widely in these respects.

First, it might be well to cite the sound patterns of the 28 samples employed. They included:

(1) 'T'ah ⁵	(2) 'a'A	(3) 'a'O'	(4) "ahA
(5) a'a'	(6) 'ahI'	(7) 'O'a	(8) E'A'
(9) I'O	(10) 'OA'	(11) "ooO'	(12) "ia'
(13) EO'''	(14) 'oo'E	(15) ahO'''	(16) A''E'
(17) Eah'''	(18) ah''ah	(19) "AE'	(20) O'a
(21) aE''	(22) 'ah'A'	(23) "aI'	(24) Ia'''
(25) 'A'O	(26) 'I'I'	(27) 'ooI'	(28) ah'A'

The results of two or three of these samples were outstanding in certain respects, which might likewise be found to be more or less true of others on closer analysis. The first of these, No. 27, proved to be completely undiscriminating. Sixty-three per cent of all the responses to this stimulus were identical ("Who are you?") while the remaining 37 per cent were to a large extent modifications of the same response. Of course, this sentence fitted the stimulus pattern very well; in fact it apparently fitted the pattern so well that it made the sample too easy and rendered it undiscriminating. Such an item might well have been discarded for one which is more functional.

The inclusion of such an "easy" item, however, did have some merit in that it tended to facilitate the maintenance of the illusion of actual speech. A patient who was becoming skeptical of the genuineness of the test or who was encountering general difficulty was often helped by this pattern, and in a few tests it was exchanged in order of presentation for some other item when such difficulties arose. On the other hand, there are some disadvantages to such a change in the order of items.

It could also be assumed that such an item as this might function well as an introductory or first stimulus, for the way that the test started was of special importance with regard to the establishing of

⁵ Capital letters have been used here to signify long vowels and lower case letters to signify short vowels; for example, "A" as in ale, "a" as in bad, "I" as in ivy and "i" as in tip. The apostrophe designates the neutral vowel "uh." Others are spelled more completely as "ah" and "oo."

rapport and the illusion of speech. Generally speaking, if a subject got through the first few stimuli successfully, there was an improvement, presumably from set rather than from practice effect, although evidence for practice effects has been found by Skinner (4).

A related situation occurred in sample 8, an apparently "difficult" item which tended to destroy the illusion of speech and started the subject to responding with syllables rather than words. Evidence for such "difficulty" on sample 8 could be found in the fact that 24 per cent of all the responses given to it were syllables, while the average number of syllable responses given to any other stimulus was only 11 per cent; also, sample 8 was often followed immediately by other Sy responses when none had occurred in the seven preceding samples.

In the case of numbers 10, 11, and 12 a difficulty arose from the outstanding similarity between these items, particularly in their rhythm. It will be noted that all three possess the basic pattern of two neutral vowels followed by two dominants and ending with another neutral. This tended to promote both formal perseveration and disinterest or reversion to syllable responses. Since all were functional items otherwise, this situation could be remedied by a change in order of presentation.

These factors tended to indicate that, to a large degree at least, the responses received from psychiatric patients were influenced greatly by a large number of extraneous factors. Among these were the character of the stimulus pattern, the order in which samples are presented, as well as the general set of the subject as determined by the instructions and early impressions of the test situation. Any extended work with such an instrument, or critical evaluation of present results, would need to take such factors into account.

CRITICAL EVALUATION OF METHOD

One obvious question must be answered before an attempt is made to evaluate the verbal summator as a test of personality factors. This question would concern the direct purpose for which the technique is to be used. Two such purposes appear to be outstanding. First, the technique might be applied as a means of studying characteristics of certain classes of personalities, for example, various abnormal and normal groups. Secondly, it might be employed as

a diagnostic instrument in clinical work. On the basis of this investigation, the summator seems better adapted to the former of these two objectives.

As a test for the study of personality characteristics, the device seems to have certain advantages. It does indicate response differences between psychiatric groups and between normal and abnormal subjects. Interpretation of these differences hinges, of course, upon the assumption of the validity of the measures as formulated. Clinical criteria, however, tend to indicate that such validity might be established by further study and by standardization and selection of stimuli. Also, the summator presents a test situation with a certain degree of uniqueness capable, perhaps, of eliciting responses from patients when other methods fail. It likewise retains many of the advantages of projective techniques, even though the results in this connection are often not obvious and are difficult to analyze.

As a diagnostic instrument, on the other hand, it appears to fail in many respects to meet the criteria of a good clinical test. In most instances it yields nothing which could not be obtained in an ordinary psychiatric interview. The extreme individual variability of responses often renders difficult the interpretation of the single response record. Objection might also be made to the effect that, for the amount of usable information received, the test is too time-consuming.

SUMMARY

The verbal summator test, as devised by Skinner (4), was administered to three groups of psychiatric patients, 24 with schizophrenia, 18 with psychoneurosis, and 15 with manic-depressive psychosis, depressed phase, in an effort to compare their responses as scored in terms of several indices devised by Shakow (2) and others. Shakow's indices included measures of suggestibility, contact, human and self reference, subjectivity and interrogativeness; auxiliary measures consisted of average response length, number of repetitions required to elicit the responses, percentage of meaningless responses, and formal and thematic perseveration. Qualitative analysis of responses was attempted to some degree.

All three groups were found to differ significantly in the measure of suggestibility, the psychoneurotic group showing the greatest and the depressed subjects the least degree of suggestibility. Contact

differences between the depressed patients and those with schizophrenia were equally indicative, the higher degree of contact being shown by the former. Measures of human and self reference, response length, number of repetitions of stimuli required to elicit a response, and formal and thematic perseveration yielded only slight differences, indicating trends in some cases, but being for the most part indiscriminating.

A striking difference between the psychoneurotic and the other two groups was found in relation to the meaningful and neologistic qualities of the responses. No neologisms were given by the psychoneurotic subjects, and a minimum of non-meaningful responses was given by this group. Both of the other groups gave neologisms and a high percentage of meaningless responses, the highest number of the former coming from the schizophrenic group.

Differences in subjectivity between the schizophrenic patients and those depressed and between the psychoneurotic and depressed patients in interrogativeness are notable. The schizophrenic group showed the greater subjectivity and the depressed group the greater interrogativeness in these two comparisons.

With regard to the structure of responses, the largest number of syllable responses were presented by the depressed subjects, and this group also produced generally shorter responses of the mere "word" variety rather than sentences.

Qualitatively, certain reactions toward the test were expressed overtly by the subjects. Characteristic of the schizophrenic patients were lapses of attention, delay in responding, and acceptance of the task with apparent lack of concern for it. The depressed subjects for the most part exhibited concern for and some resistance to the situation. The typical attitude of the patients with psychoneurosis was a skeptical and questioning one.

Projective "content" in the responses was found to be scarce and hard to analyze, but an effort was made to relate some examples of such "content" to case-history data and psychiatric reports.

A short analysis was made of the responses in relation to specific stimulus patterns and to the significance of the stimuli in the general test situation.

On the basis of this investigation it was concluded that the verbal summator technique is a useful device for the study of personality

characteristics, but that its diagnostic value is probably rather limited.

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A PLAY ACTIVITIES BLANK AS A MEASURE OF DELINQUENCY IN BOYS

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THE delinquent¹ boy has been subject to much investigation during the last three decades. Attempts to establish psychosomatic, mental, emotional, and personality differences between delinquent and nondelinquent juveniles have frequently resulted in differences between mean performances, many of them statistically significant. Generally, however, the ranges of performance in such groups have overlapped so extensively as to preclude the accurate assignment by score alone of an unidentified case to either group. Less quantitative techniques, such as the life-history approach, have revealed social factors significant in the development of antisocial behavior. Evidence, too extensive to be detailed here, indicates that the typical delinquent boy is somewhat below average in mental ability, lacks interest in scholastic and verbal activities, is a year or more retarded in school, is likely to be about average in physical status and mechanical ability, comes from a socially and economically inadequate home which is more likely than not disturbed by death of a parent, divorce, or desertion. It is probable, too, that the attitudes and goals which are reflected in the behavior of delinquents differ from the attitudes and goals of nondelinquents; the evidence is perhaps less conclusive than that bearing on the factors mentioned above, but such evidence exists. In spite of these results, social scientists generally have failed to develop techniques for individual prediction of early forms of delinquent behavior. The complex nature of the social process, the operation of the principle of multiple causation, the socio-legal nature of the term "delinquent" itself, are conditions which enlarge the error of any predictive instrument.

THE PROBLEM

Interests, specific and patterned, have been found consistently to differentiate occupational groups, intelligence groups, and groups

¹ The term "delinquent" throughout this paper refers to individuals adjudicated such by legal procedure.

selected from other psychological or sociological continua. The persistence and magnitude of such differences make it likely that interest differences exist between unselected and delinquent boys. The purpose of the present study, in brief, was to explore this possibility of differential interests in play.

The play interests of delinquent boys have long been mentioned as contributory to crime, but few definitive studies have been made. Thurston's (18) early work in Cleveland showed that more than half of the delinquents interviewed spent their leisure in unguided and desultory fashion, whereas less than 1 per cent of the "wholesome" school child's behavior is spent in like manner. The study emphasized the potential danger of "unorganized" individuals becoming delinquent and concluded that the typical delinquent's play behavior consisted chiefly in acts which were similar to but less serious or less dramatic than his delinquencies, that delinquencies were frequently suggested by habitual play, and that the need for money for recreational purposes was a strong motive in delinquency. The Gluecks (6) report that of 976 cases, 93.4 per cent used their leisure harmfully, having bad habits, poor companions, or frequenting undesirable places of recreation; only three (.3 per cent) used their leisure constructively as *members* of a well-supervised social group.

Murray (11) compared the play information of delinquents and nondelinquents, using an objective test of terms and rules common to certain athletic sports; he also studied achievements in certain sports by means of the California State Decathlon tests. While delinquents were inferior to nondelinquents with respect to information, they were about equal in athletic performance. Ford and Balen (4) have indicated that no difference in delinquency rate of certain areas in a large city appeared when the numerous public playgrounds were supervised. The experimental period of no supervision (September, October, November) is, however, scarcely comparable to the control period of supervision (June, July, August), since the factor of school attendance was apparently not considered. Moreover, a three-month experimental period is possibly too brief to permit significant differences to appear. Hardy (8) used yearly records, behavior rating schedules, parental reports, pupil questionnaires, and individual interviews with "well-adjusted" and "inadequately adjusted" school boys and found "no large differences" in the use of leisure time. Blumer's study of motion pictures and crime (2) has indicated that delinquents and nondelinquents,

exposed to the same kind of film, tend to incorporate into their play experience dissimilar features of the action portrayed. An earlier study in which the writer participated (1) revealed major differences between the play preferences of known delinquent and unselected boys, and the success of this simple questionnaire venture led immediately to the further investigation reported here.

THE INSTRUMENT

The check-list has long been used in the study of play activities. Lehman and Witty's technique (9), calling for reports on activities engaged in during the previous week, is not adapted to institutional usage, since the guided play life in a state school does not permit delinquent tendencies to operate. Hence, a play questionnaire for obtaining reports on past experience was devised. A list of 125 items, representing a variety of activities, was drawn up; each item was accompanied by the symbols "L," "S," and "N," standing for *lots*, *some*, and *never*, respectively. Illustrative of the items are the following:

Playing "Cops and Robbers"	L	S	N
Going to the movies.....	L	S	N
Ringling doorbells for fun.....	L	S	N

Thus, the Play Activities Blank, as used in this study, combined the rating scale and controlled questionnaire techniques.² The advantages and disadvantages of these methods have been detailed elsewhere (5; 7; 17) and were fully recognized when this study was planned.

The Scoring Key

The Play Activities Blank was submitted to 156 boys from the seventh, eighth, and ninth grades in two Minneapolis junior high schools in areas of the city contributing relatively few individuals to the Juvenile Court records. No boys who had been in contact with the Court for formal or informal hearings for a year preceding the testing were included in the group. These boys constituted the nondelinquent criterion group. A criterion group of delinquents was obtained by testing 80 boys in the Minnesota State Training School in corresponding grades and 43 boys in fifth- and sixth-grade classes. Table 1 indicates that the delinquent group (av. CA 14

² Copies of the Play Activities Blank and scoring key, which can be duplicated for experimental use, can be obtained from the author.

years, 7 months) was somewhat older than the nondelinquents (av. CA 13 years, 11 months). The delinquents were undoubtedly of lower average IQ rating, and their advantage in chronological age may well have made the two groups more similar in mental age. The Wrightstone abbreviation (19) of the Sims scale was used to estimate socio-economic status. The delinquents obtained a mean rating of 32 points and the nondelinquents a mean of 41 points; the difference, 9 points, has a standard error of 2.33; the critical ratio of 3.86 reveals this difference to be significantly greater than zero.

TABLE I
AGE DISTRIBUTION OF DELINQUENT AND NONDELINQUENT SAMPLES

AGE	DELINQUENTS	NONDELINQUENTS
11½	4	2
12½	11	50
13½	19	53
14½	36	43
15½	33	8
16½	19	
17½	1	
N	123	156

Data sheets were compiled, showing the percentage of each group which selected each of the three responses to every item. The differences between corresponding percentages of the criterion groups were obtained, and the standard errors of these differences were computed by Yule's formula and the Edgerton-Paterson tables (3). A critical ratio of 3.0 or over was accepted as indicating a statistically significant difference between the criterion groups on a given response to a particular item. Each such difference was given a unit scoring value of "plus" if the percentage difference favored the nondelinquent criterion groups, and "minus" if the percentage difference favored the delinquents. In 52 out of the 125 items such statistically significant differences appeared. The score for any paper was derived by summing algebraically the plus and minus values of the responses the subjects had checked. A minus or low positive score would then indicate delinquency. It will be noted that in this measure, contrary to the practice of some "personality tests," a high positive score is socially desirable.

Reliability of the Blank

Consistency of Response. Two testings separated by seven weeks were obtained from 92 boys in one of the criterion nondelinquent schools. Direct item-for-item comparisons of each individual's two

TABLE 2

RELIABILITY OF THE PLAY ACTIVITIES BLANK AS INDICATED BY CONSISTENCY OF
ITEM RESPONSE

	AVERAGE PERCENTAGE OF RESPONSES TO 125 ITEMS	
	SCHOOL A—7 WEEKS	SCHOOL B—8 WEEKS
Percentage identical	73.1	70.6
Percentage displaced one response letter	25.0	28.3
Percentage displaced two response letters (max. shift)	1.9	1.1

sets of responses were made to determine the percentage of identity or the percentage of shifting of response. These comparisons were tabulated for each item and for all cases. Table 2 indicates the reliability of the blank computed by this method. Individual items ranged from about 60-per-cent identity of responses to as high as 87-per-cent.

TABLE 3

RELIABILITY OF THE PLAY ACTIVITIES BLANK AS DETERMINED BY THE
RETEST METHOD

SCHOOL	N	r	P *	TIME INTERVAL
A	66	.80	<.01	8 weeks
B	46	.75	<.01	7 weeks
State School	59	.62	<.01	8 weeks

* According to Snedecor's table (16, 133) of Fisher's *t* values for *r*, the probability that such coefficients could occur in a population where the true retest coefficient is zero is less than one in 100.

Split-Half Correlation. Corrected coefficients for three groups were .84 ($N=137$); .88 ($N=110$); and .90 ($N=89$).

Retest. Retest reliabilities are given in Table 3.

Standard Error. The standard error of a raw score, as computed by the formula $\sigma_{1\infty} = \sigma_1 \sqrt{1 - r_{11}}$, is 4.5 points (7, 414).

As computed by several methods, the reliability of the Play Activities Blank appears to approximate that obtained by many other inventory devices.

Validity of the Blank

The problem of validity, always important in psychological measurement, becomes paramount in questionnaire studies. Inventory "tests" are indirect measures and it is essential to demonstrate that the items actually do reveal the traits or qualities one expects from them. In addition to the direct method of correlating results with another presumed index of the same trait, there are indirect evidences of the Play Activities Blank's validity.

Correlating "Test" Scores with Behavior Ratings. The Blank was given to 461 junior-high-school boys in seven additional Minneapolis schools. Convenient groups—not all available boys—were tested in these schools, but no known biases entered the selection. Ratings on a five-point scale referring to the individual's observance of rules and of personal and property rights of others (but not using the word delinquent) were obtained for each individual from as many of his teachers as possible. The median of these several ratings (varying from 2 to 9, generally about 4) constituted that individual's "behavior rating." Unfortunately, because of demands already made on the participating schools, the reliability of these ratings could not be checked. The coefficient of contingency method was used to express the degree of association between score on the Play Activities Blank and the behavior ratings. A value of *C* for each school was computed separately; these ranged from .44 to .67, where .89 is the maximum for a five-fold table (12). The median of the seven values was .56, indicating a substantial degree of association.

Validation by Comparing Matched Groups. From the Juvenile Court files of Minneapolis for the year preceding the testing a list of new entries was drawn, along with the name of the school of their attendance. Eight schools were then selected where the concentration of these cases was greatest; all schools were located in "delinquency areas" as these areas had been determined in an earlier survey (15). The cooperation of school principals enabled the

writer to test the selected delinquents along with other boys from their homeroom classes, so that neither teachers nor boys knew of any selection of cases. Sixty-three delinquents were located and tested in the eight schools that had been selected. Data concerning socio-economic status, school grade, school marks, and home street address were available in all cases, and intelligence quotients appeared on the personnel records of 26 of the group.

Out of the unselected boys tested in each school an individual was drawn to match each delinquent in school grade, in age, and as closely as possible in scholastic marks, attained by averaging numeri-

TABLE 4

COMPARING DELINQUENT AND NONDELINQUENT CONTROLS WITH RESPECT TO
MATCHED VARIABLES

GROUP	NO. OF PAIRS	CHRON. AGE		SOCIO-EC. STATUS		ACADEMIC MARKS		I.Q.	
		NO.	MEDIAN	NO.	MEDIAN	NO.	MEDIAN	NO.	MEDIAN
Delinquents	63	63	15-6	63	37.7	32	2.7	26	100.0
Nondelinquents		63	15-3	63	37.7	33	3.1	22	101.7

cal equivalents of letter grades. When available, intelligence quotients were used, derived in the main from the Pressey Senior Classification Tests; a few from the Otis Self-Administering Tests were equated to the Pressey values by the sigma-score method (10). Intelligence quotients derived from other tests or from grade-school records were not used. Table 4 reports the success of the matching. It is reasonable to assume that the delinquents and the nondelinquent controls were comparable with respect to the criteria used.

To eliminate any difference in play score caused by modifications in play patterns adopted by juveniles of differing neighborhood environments, the writer attempted to match on this factor as well. In some cases members of a pair lived in the same block; in other cases the two members lived as much as seven blocks apart but in the same general neighborhood. Members of the majority of pairs lived within four blocks or less of each other.

Table 5 shows the status of the Minneapolis delinquents and of the selected nondelinquent controls on the Play Activities Blank.

The difference between mean play scores of the two groups, 10.5 points, has a standard error of 2.2 points and is statistically significant. Thus the original differentiation between delinquent and nondelinquent criterion groups is maintained on samples quite similar to each other on a variety of factors except that of known delinquent behavior.

Relationship of the Blank to Socio-economic Status, Intelligence, and Chronological Age. Product-moment correlations in three groups between play scores and socio-economic status, as indicated by the Wrightstone blank, gave values from $+.02$ to $+.19$, only one of which exceeded the $P = .05$ level of probability in significance, and it fell short of the $P = .01$ level.

TABLE 5

COMPARISON OF PLAY ACTIVITY SCORES OF MATCHED GROUPS

GROUP	NO	MEDIAN	MEAN	S.D.
Delinquents	63	16.1	15.1	14.2
Nondelinquent Controls	63	26.6	25.6	9.6

Intelligence quotients were available for group tests on subjects in two schools (not the criterion group) and for the institutionalized delinquent group. All of these values, which ranged from $-.30$ to $+.30$, fall below the $P = .01$ level of probability in significance.

Scores derived from the list of play activities in the age range studied exhibited an insignificant relationship with chronological age. Six product-moment coefficients varied from $+.03$ to $-.31$ in as many groups. None of these values reached the $P = .01$ level of probability; and only one reached or exceeded the $P = .05$ level.

Indirect Evidences of Validity. The cooperation of the subjects was maintained at a high level in order to attain truthfulness of response. At no time were boys or their teachers informed of the basic nature of the study; it was introduced as a survey of "what boys like to do for fun," recognizing that "all of us do all sorts of things." All testing was performed by the writer, who was introduced as a person from outside the school system. The general cooperation, as judged from classroom demeanor, appeared to be excellent.

In several small groups of 20 to 30 cases, both delinquent and nondelinquent, a second blank was passed out after the first had been completed and collected. Under the pretext of "testing the test" the subjects were invited to "fake themselves as much as possible." Rank-order correlations in these small groups with supposedly bona fide responses were uniformly of the order of $-.74$ to $-.78$.

To determine a "chance" score on the blank, a die was used to "take the test." Faces of a die were assigned the response of the questionnaire as follows: a "one" or a "six" = L; a "two" or a "five" = S; a "three" or a "four" = N. The die was rolled down an inclined plane of corrugated card board to obtain a chance response to an item of the inventory. Since there were 125 items in the inventory, 125 casts completed the hypothetical responses of the person marking the blank card utterly at random. Fifty blanks were filled in this manner. When scored by the key, the mean value was found to be $+0.5$ with a sigma of 4.6; these values are clearly not comparable to statistics computed with the performances of actual subjects as reported in Table 5.

While the validity of the blank cannot be said to be indisputably established, a number of criteria attest its value. The test bears an appreciable relationship to teachers' estimates of "law-abidingness," as defined in terms of observance of rules and of property and personal rights. A significant differentiation persists when the blank is applied to matched samples of delinquents and nondelinquents not used to determine the scoring key. Scores on the blank have an insignificant relationship to socio-economic status as measured in this study, to intelligence as indicated by IQ, to scholastic attainment, and to chronological age of the group examined. Actual scores are significantly different from chance scores and appear to reflect rather faithfully what the individual's play experiences have been.

Discussion of Results

Table 6 lists mean scores of several groups of delinquents and nondelinquents, not specifically described in this paper. These results may be compared with those in Table 5. That the experimental group of Minneapolis delinquents achieves scores on the Play Activities Blank considerably higher than other delinquent groups is perhaps significant.

TABLE 6

MEANS AND STANDARD DEVIATIONS OF PLAY ACTIVITY SCORES,
MISCELLANEOUS GROUPS

GROUP	N	MEAN *	S.D.
Unselected junior- and senior-high-school boys, Terre Haute, Indiana	386	+26.1	15.3
Unselected school boys, Minneapolis, Minnesota	540	+24.2	12.8
Indiana Boys' School (delinquents)	311	+7.7	17.7
Minnesota State Training School (delinquents)	460	+7.2	14.3

* The possible range is from -41 to +48.

The Minneapolis delinquents were cases who had been in court for the first time during the year preceding the testing. Many of them were on probation at the time of testing. Possibly they represent a group whose delinquencies were not so serious as those of institutionalized boys. Certainly some selective process must operate when certain boys are continued on probation while others are committed to correctional schools.

The degree of overlap in score between delinquent and unselected

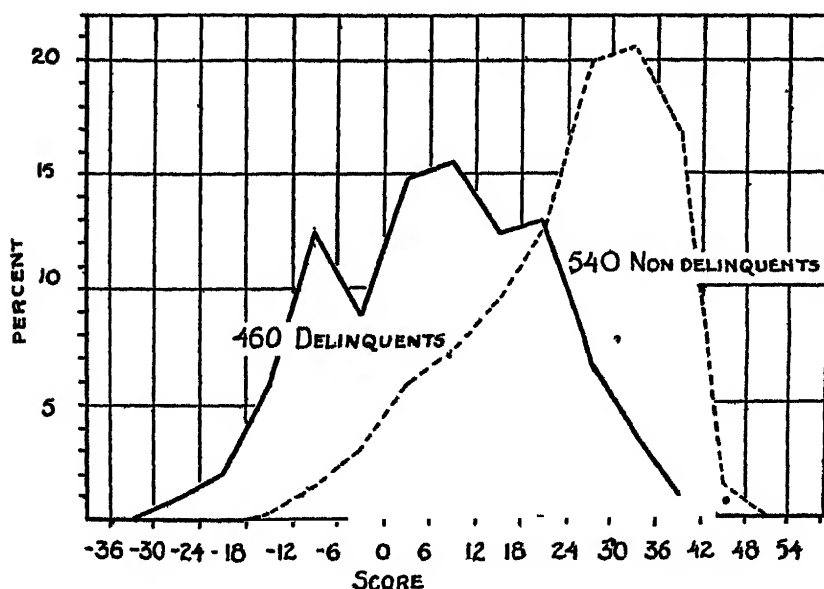


FIG. 1. DISTRIBUTION OF PLAY ACTIVITIES SCORES FOR DELINQUENT AND NONDELINQUENT SUBJECTS

groups, revealed in the accompanying diagram, was anticipated in the introduction, where the socio-legal nature of "delinquent" as a behavior category was mentioned. That there is no greater overlap than obtains is particularly gratifying in view of the results often secured by more elaborate batteries of tests. It should be clear that the institution boys included in this study do represent a selected group. Though the seriousness of the delinquency of individual members may (and probably does) vary appreciably, all such boys have been guilty of some relatively troublesome misdemeanors. On the other hand, the unselected group of presumed nondelinquents undoubtedly contains a number of boys who have transgressed as seriously or more seriously than some of the institutionalized delinquents. The negative skewness of the curve in Figure 1 for unselected subjects suggests that the group includes cases which might properly belong in the delinquent class.

Another explanation is more statistical in character. It holds that the behavior typical of the unselected group is imperfectly assessed by the instrument—that there is not enough "ceiling" for boys extremely unlike delinquents to exhibit their special interests. The scoring key provides a possible range of values from -41 (if only items discriminatory of delinquency are marked) to $+48$ (if only positive items are selected). While there is a fairly wide range of score possibilities, few of the items discriminate positively in terms of *participation*. Thirty-eight items discriminate *negatively* in terms of "lot" or "some" *participation*, as against six items discriminating positively in terms of such categories. The scoring key is thus heavily weighted with activities in which participation is significant for delinquency. Thus some evidence may be presumed to exist that the distribution curve for unselected boys results from a statistical artifact.

That the items of a constructive nature included in the test do not differentiate the groups is perhaps important. While nondelinquents appear to avoid many of the experiences which delinquents frequently or sometimes carry on, there are few items of a more positive nature in which delinquents do not participate as frequently as nondelinquents. It is probably insufficient to say that the delinquent's experiences are simply additive in nature, and as yet the "pattern" of such experiences has not been sufficiently studied. Does a more clear-cut pattern of interests and activities exist for

delinquents than for nondelinquents? Qualitatively, considerable help on this problem has been given by the studies of Shaw (13; 14), and there is need for more research of a quantitative nature.

While it is possible to designate a "critical score" on the blank significant for delinquency, such a score makes two assumptions. In the first place, delinquency-nondelinquency, perhaps not unreasonably, is assumed to represent a continuum of behavior. The behaviors constituting the delinquent end of the continuum have been described in social and legal practice, and varying degrees of seriousness have been attributed to them; the behavior on the non-delinquent end can conveniently be designated as the converse of the delinquent activities. Probably delinquent deviates will always be easier to select than nondelinquent deviates. The commitment of the act establishes delinquency; the fact that an act has not yet been committed argues for nondelinquency only on a practical basis. One cannot prove a universal negative; he can only assert that the event has not *yet* happened!

A second assumption is somewhat less easy to defend—that the continuum of behavior which constitutes delinquency-nondelinquency is reflected in or is paralleled by a continuum of undesirable-desirable play activities, represented by the algebraic score on the blank. Delinquency is frequently *more* than an accumulation of the minor types of misdemeanor included in the blank; car thefts, burglaries, robberies, larceny of varying degrees are too frequent among known delinquents for one to say that delinquency is simply the difference between having thirty undesirable behaviors in one's repertoire and only five such behaviors. A possibility, which remains to be demonstrated, is that an accumulation of less important delinquencies makes it relatively easier for the individual to break over into major offenses.

With these assumptions in mind, the reader may accept with the necessary caution the following assertions: A boy whose score exceeds 24 resembles in his play interests 60 per cent of unselected boys and only 12 per cent of institutionalized delinquents; likewise, a boy whose score lies below + 12 resembles 62 per cent of delinquents and only 18 per cent of unselected boys. If one can safely assume that the skewed tail of the unselected distribution actually contains some "uncaught" delinquents, one may designate the range between scores of 12 and 24 as the zone of uncertainty. Below this

zone a boy's interests strongly suggest the general pattern of delinquent play interests; above this zone, delinquency would not be suggested by the nature of his interests. Within the zone, while remaining in doubt as far as this measure is concerned, one should attempt to establish additional cross-bearings on the individual's conduct.

The Play Activities Blank appears to be useful for making group surveys of interests with respect to possible delinquency. While the blank is not sufficiently reliable in the present form to predict individual behavior, it can act as a screening device for sorting out individuals to whom a school might wish to give particular attention through its visiting teachers, counselors, and recreational directors.

SUMMARY

1. The construction of a questionnaire rating scale to investigate teen-age boys' play practices has been found feasible.

2. Certain items in a long list of play activities have been found to discriminate sharply between delinquent and nondelinquent boys. A key built to score these items differentiates not only the criterion groups on whose responses the key was founded but also other groups selected in a manner similar to the criterion groups.

3. Reliability is sufficient at present for group study; corrected split-half coefficients are of the order of .84 to .90 in groups of approximately 100. Repeat reliabilities over a period of months vary from .62 to .80.

4. The test appears to satisfy reasonably well a number of criteria of validity. It discriminates matched groups of delinquent and nondelinquent cases not included in the original standardization groups. In the samples studied, scores on the blank have a negligible association with such factors as chronological age, intelligence, and school attainment, but are appreciably associated with ratings of "law-abiding" behavior.

5. The data indicate that the delinquent individual's play life frequently involves activities which society views as transgressions. Nonparticipation in those activities which are significant for delinquency appears to be more indicative of nondelinquency than does participation in socially accepted or desirable play forms.

6. The Play Activities Blank is considered to be of some value for screening out boys who need special attention from school guidance and recreational services.

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SHORT ARTICLES AND NOTES

THE EFFECT OF METRAZOL SHOCK UPON HABIT SYSTEMS *¹

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EXPERIENCE with the shock therapies in the treatment of schizophrenia suggests the possibility that a strong shock such as metrazol may operate psychologically by affecting the acquired habit patterns of the psychotic. It is possible that one of the more important effects of the shock is the weakening of more recent acquisitions, with the result that older patterns which are suppressed become temporarily dominant. These more recent acquisitions may be considered to take the form of such schizophrenic reactions as apathy, strong tendencies toward autism, habits involving motivation and particular forms of defense reactions to frustrations and conflicts. The more normal patterns of behavior in adjustment, which the schizophrenic tended to employ before the onset of the psychosis, are incompatible with these more recently acquired schizophrenic patterns of adjustment, and hence are superseded. A strong shock may serve to weaken these more recent schizophrenic acquisitions, thus permitting the more normal patterns to become again ascendant. The degree of permanence of such a shift depends on the particular conditions which favor the strengthening of one or the other of these conflicting systems.

This simple framework obviously ignores the more dynamic aspects of conflicts between ego and basic drives. But since in all probability these operate through a habit structure, we may overlook for the time being the possible direct effect of the shock upon the drives themselves. The hypothesis thus deals with only one major aspect of this form of therapy. It makes no attempt to account for the total change in the behavior dynamics of the schizophrenic.

Some support for such an hypothesis may be inferred from the recent experience with shock therapies.²

1. Best results are claimed only with cases in which the onset of the psychosis is quite recent. Older cases are notoriously resistant to this method of treatment (1; 4; 12; 15).

2. The best prognosis appears to be found in the relatively intact cases, in which such schizophrenic traits as apathy, withdrawal, and autism are minimal. In both of these instances it is quite possible that the more recent schizophrenic patterns are not as firmly established and are more readily weakened by the shock (6; 8).

3. In many cases the effects of the shock are only temporary and are followed by a later return to the psychotic condition. The temporary changes in the psychotic patterns may account for the fact that schizophrenics tend to show much more partial improvement than complete remission (10; 12). This fact may also be accounted for by the hypothesis. Experience at some hospitals indicates that metrazol may be more effective if a program of psychotherapy is included between

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² In view of the large number of reports on the subject, the references are presented only as illustrations of the main findings.

shocks. Thus, during the time that the newer schizophrenic acquisitions are in a weakened condition as a result of the state created by the shock, the psychotherapeutic endeavors may serve to strengthen the more normal behavior patterns which are temporarily stronger. This is in line with the observation that one of the main effects of convulsive metrazol therapy is to make the patient more accessible to psychotherapy (5; 10).

4. Another bit of evidence in support of the hypothesis may be adduced from the fact that a number of shocks are essential in the therapy. Frequent repetitions of the shock may serve to weaken still more the newer patterns, with the result that the dominance of older patterns becomes more permanent.

5. The fact that metrazol shock has been tried in several other forms of psychosis with perhaps even better success indicates that it is by no means a specific for schizophrenia (2; 3; 9). A logical deduction is that the efficacy of metrazol lies primarily in its effect upon the habit mechanisms involved in the behavior of the psychotic.

6. Various reports indicate that shock therapies may not actually show a very much higher remission rate than spontaneous remissions, but may serve merely to hasten the process of remission (4; 12). An hypothesis based upon habit mechanisms is consistent with this finding as well. Metrazol may be effective only when the older, more normal patterns are not effectively extinguished (in the conditioned-response sense), such as may be the case in older deteriorated psychotics. The pharmacological shock aids in the return to dominance of older habits. But if the schizophrenic patterns are too well entrenched, so that the difference in strength between the older and newer patterns is too great, the shock is not sufficient to affect the dominance hierarchy. Some experimental support for such an hypothesis is found in the work of Ziskind, Loken, and Gengerelli (16).

PROCEDURE

In order to check the postulate that a strong pharmacological shock, such as metrazol, has the effect outlined, an experiment was carried out on a group of 21 schizophrenics undergoing metrazol therapy. A second group of 21 schizophrenics served as controls. This group was essentially comparable to the metrazol group, with the exception that they were not undergoing metrazol therapy at the time.

Two conflicting habits on as simple a level as possible were established. Simplicity of the habits was essential to insure a good degree of cooperation in the patients. Habit I consisted in training the subject to move his finger to the right to a tone of 500 cycles, and to the left to a tone of 700 cycles. For Habit II the subject was trained to move his finger in the direction opposite to that used in Habit I. A stylus attached to the finger traced a record of the reaction upon moving waxed paper.

On the first session the subject was given 100 training trials—50 to each of the tones, the stimuli always being presented in a predetermined varied order. This constituted the training on Habit I. On the second session, 24 hours later, the subject was given training on Habit II by being instructed to reverse the direction of his response to the tones. Seventy-five training trials were given. One hour later, the subjects of the metrazol group received a metrazol injection. They were then retested one and a half hours after the injection to determine which habit was dominant.⁸ On this session the subject was instructed not to decide in advance

⁸ There is evidence that by this time the observable physiological effects of the convulsion have largely subsided (7; 13).

in which direction to move his finger but to move his finger as quickly as possible as soon as the tone was presented. Ten trials were given, five to each of the tones. The direction in which he moved his finger indicated whether Habit I or Habit II was dominant. The time relationships between sessions were identical for both groups of subjects.

The number of training trials to establish the habits was decided upon after preliminary work on a separate group of controls had indicated that in most subjects after 100 trials on Habit I and 75 on Habit II neither habit was strengthened to a point where it was strongly dominant at the time of retest.

The main function of these induced habits was to serve as a means of testing the hypothesis that a single metrazol convulsion can affect the balance between incompatible older and more recent habit acquisitions in such a way that the older suppressed habit systems become dominant. With this purpose in mind, no attempt was made to duplicate (except with respect to temporal sequence) the complicated mechanisms operative in the schizophrenic. For purposes of obtaining evidence as to whether such a mechanism can be operative in shock therapies, simplicity and objectivity of the habit mechanisms was a prime consideration in order to circumvent the autistic factor.

RESULTS

In Figure 1 is shown a scatter distribution of both groups of subjects on the retest following the convulsion. The abscissa of the graph indicates the number,

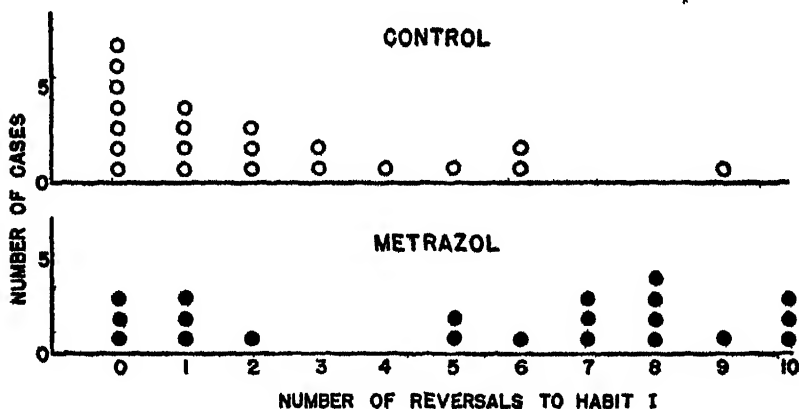


FIG. 1. DISTRIBUTIONS OF CONTROL AND METRAZOL SUBJECTS WITH RESPECT TO NUMBER OF REVERSALS TO HABIT I

of trials on which the subject responded in the direction of Habit I. A high value indicates that the older habit tended to be dominant. It may be seen that there is a considerable range of reversals to Habit I in both groups of subjects, with only a small percentage of the cases showing a complete dominance of either habit. This is understandable, as the number of training trials selected was such as to militate against either habit being dominant at the time.

The control group shows a markedly skewed distribution, with the bulk of the cases falling below the point of 50 per cent reversals to Habit I. In the metrazol group, however, most of the cases fall above this 50-per-cent point. This latter

distribution is apparently bimodal, with 7 cases showing a strong dominance of Habit II. This may be due to the operation of one or more factors. It is possible that the metrazol convulsion may not have been as severe in these cases, even though the method of administration of the metrazol was such as to ensure a convulsion every time. The possibility of self instructions is also a factor to be considered, although this may be controverted by the fact that few subjects responded entirely according to only one of the habits. On the other hand, it is entirely possible that the use of a larger group of subjects might eliminate much of this bimodal tendency.

Table 1 shows the distribution when the cases are divided into two classes: that in which Habit I is dominant and that in which Habit II is the stronger. It may

TABLE 1
NUMBER OF SUBJECTS SHOWING REVERSALS TO HABIT I

GROUP	LESS THAN 50 PER CENT REVERSAL	MORE THAN 50 PER CENT REVERSAL
Metrazol <i>n</i> = 21	7	14
Control <i>n</i> = 21	17	4

$$\chi^2 = 7.88 \text{ (Yates correction for small } n\text{)}$$

$$p < .01$$

be seen that although only 7 of the metrazol cases show less than 50 per cent reversal to Habit I (that is, Habit II is now dominant), 17 of the control cases fall into this class. On the other hand, 14 of the metrazol subjects and only 4 of the control subjects show a dominance of Habit I. A Chi Square test, corrected for small number of cases, indicates that this difference between the metrazol and control groups is quite significant at the 1-per-cent level.

It therefore appears quite probable that a single metrazol shock has a greater weakening effect upon newer acquisitions than upon older incompatible learned material, even though there is only a comparatively slight difference in age of the habits.

The criticism might be raised that the metrazol patient was still in a confused state at the time of the test, and hence was unable to follow directions as well as the control groups. But the fact that in both groups only a comparatively small percentage of the subjects acted entirely according to either Habit I or Habit II, with the majority showing some conflict between the two habits, indicates that this factor could not have accounted for the results obtained. The test was given at a time when the subjects were quite well oriented. Most of them responded as energetically as they did on the training trials. Nor does it seem likely that the shift to Habit I is accounted for by some simple explanation of amnesia for the events immediately preceding the shock, for the training on Habit II occurred an hour earlier. No signs of even partial amnesia for the earlier session were observable in either the behavior of the subjects or in the questioning following the test

trials. In two cases, the subjects complained of slight dizziness at the time of the test. But both were able to perform the task quite adequately. Of course, some amnesia for the instructions may have been present, even though it was not observable as a factor. A separate experiment is required to check this point more adequately.

On the other hand, even if some general factor, such as amnesia, is an important variable in the effect obtained, it does not thereby disprove the hypothesis, in view of the rather involuntary nature of the habits employed. It is indeed quite probable that the amnesia itself is a resultant of the same condition which produces the reversal of the habits. In any case, the empirical result is the same, namely that a metrazol convulsion has a differential effect on habits of different degrees of recency.

DISCUSSION

The importance of this study lies primarily in indicating that a metrazol shock does have a differential effect upon older and more recently acquired habits. Its value lies primarily in the evidence it affords that a general psychological principle, quite analogous to the temporary inhibition of conditioned responses reported by Pavlov (11), Switzer (14), and others, may play a role in metrazol therapy. Without further supporting evidence considerable caution must be observed, however, in applying this principle to the effect of metrazol shock upon the symptomatology which the psychotic patient presents. The present study can therefore in no sense be considered a critical experiment of the hypothesis presented earlier in the paper. It merely demonstrates that such a mechanism as outlined is operative in metrazol therapy. Until further evidence is amassed, consideration must be given to the possibility that this principle may be restricted in its operation.

The habits employed in this study were not strictly comparable to the actual long-standing habit mechanisms of the schizophrenic from the standpoint of age, motivation, complexity, or degree of personality involvement. To validate the hypothesis experimentally, older and less transitory habits should be induced in a way similar to that in which simple habits were employed in the present study. Ideally, such habits should involve personality reactions more closely associated with basic patterns. Furthermore, to test for the permanence of effect, the present study should be repeated with several different temporal intervals following the convulsive shock in order to obtain indications of the curve of recovery in inhibitory effect. Conditioned-response principles lead to the expectation that spontaneous recovery in strength of Habit II would occur. Another study that could profitably be undertaken in this connection is the determination of whether any cumulative or more permanent effect occurs with repetition of the convulsive shocks.

Since the present study is in essence exploratory, further indications are needed before determining the importance of a mechanism such as that outlined in accounting for changes in the psychotic's mental status.

SUMMARY

1. The present study is a test of the hypothesis that a single metrazol shock weakens the more recently acquired habits to a greater extent than older habits which had been previously repressed or extinguished, with the result that the latter then become dominant.

2. Twenty-one schizophrenics undergoing metrazol therapy were compared with a control group. The techniques involved setting up a simple motor habit and then training in another habit which was similar to, but incompatible with, the

first habit, thus necessitating the suppression of the first habit. The experimental group was then subjected to a metrazol shock, and both groups tested for retention of the habits.

3. It was found that a statistically significant higher number of reversals to the older habit occurred in the group subjected to the metrazol shock than in the control group.

4. The psychological implications of this finding for convulsive therapy are discussed.

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TEMPORARY MENTAL IMPAIRMENT FOLLOWING A PETIT MAL ATTACK *

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THE development of the electroencephalograph with its possibilities for diagnosing minimal epileptic states has recalled attention to the prevalence of mild petit mal attacks which are not attended by any but the slightest, fleeting objective signs. Recently we have observed such a case under unusual circumstances which made it possible to obtain a measure of the amount of impairment in mental function following the petit mal seizure.

The subject was seen during the routine neuropsychiatric examination of recruits at the U. S. Naval Training Station, Newport, Rhode Island. While he denied any history or knowledge of convulsive disorder, he gave the clinical impression of some form of epilepsy. The psychiatrist then requested an immediate psychometric testing, hoping that this might reveal further information. The psychologist was unaware of the possibility of epilepsy and treated the case as one of suspected mental deficiency. The test battery in use at Newport consists of four brief subtests, each of which is scored and evaluated separately. On the first two of these the subject's performance indicated dull normal intelligence. Just before the beginning of the third test the psychologist noticed a brief flutter of the subject's eyelids and the temporary presence of a fine head tremor. These were noted but casually as possible signs of some excitement in the testing situation. On the third and fourth tests, however, the subject's performance fell to a level bordering on the feeble-minded. In terms of mental age (with 14 considered as the adult level) his score went from 13-6 on the first part of the test to 11 on the second. This drop demanded some explanation, particularly because of the sharp cleavage between the performance level on the two parts of the test. At this point the psychologist realized that the fluttering eyelids and head tremor might have signified a temporary impairment of consciousness. Direct questioning then uncovered a typical history of petit mal attacks and the subject admitted having had a seizure between the second and third tests. He revealed he had lied to the psychiatrist lest his disability bar him from the Naval Service. It was not possible to follow him further at that time, but he was retested later in the day on the observation ward and passed all four tests on the dull normal level.

When the subject was studied during his stay on the observation ward he gave a clear history of minor petit mal seizures occurring with no, or very minimal, overt behavioral manifestations, and he was observed by another medical officer during the course of one such attack. While he was being studied he received other routine tests. His performance on some of these showed wide variation, suggesting that he had suffered further attacks, but this could not be confirmed.

The danger of such apparently slight petit mal attacks for men in the armed services is seen from this case where, as a consequence of a seizure, the level of mental ability fell from a dull normal performance to one bordering on feeble-mindedness. Had the attack occurred during actual battle when efficient, exact performance is required, of every man at his battle station the results might well have been disastrous.

* The opinions or assertions contained herein are the private ones of the writers and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

REVIEWS

EDITED BY EDNA HEIDBREDER

FACTOR ANALYSIS: A SYNTHESIS OF FACTORIAL METHODS. By Karl J. Holzinger and Harry H. Harman. Chicago: Univ. Chicago Press, 1941. Pp. xii+417.

The authors' stated purposes include "a general treatment of factor analysis including an objective basis for comparing various forms of solution" and to supply "the methods of analysis in a very simple, readable form for the worker who is not concerned with the rigorous foundation." In the opinion of the reviewer, both objectives have been adequately accomplished. There is sufficient material to interest the one seeking the mathematical foundations of factorial theory and methods and at the same time for the non-mathematical research worker who is willing to do some attentive, if not difficult, reading. In the presentation of the various factor theories the authors take pains always to be rigorous in their statements. Mathematical proofs are liberally provided. Both geometrical and matrix-algebraic conceptions are included in the demonstrations. The uninitiated in this kind of language will be unable to read profitably many of the chapters, although Appendix A presents the fundamentals of matrix theory which will be considerable aid to those with some mathematical background. Factorial procedures are described in detail, step by step, so that many who do not follow the mathematical expositions may nevertheless be able to apply the computational procedures necessary for factor solutions.

Having previously championed one particular factorial theory and method of solution, the authors now present in a rather unbiased manner most of the current theories and procedures. This has the advantage for the reader who wants to know all approaches to the field and wishes to decide for himself which of the several voices should receive his attention. The reader who wishes to be told which theory or method best represents the nature of things will be disappointed, for the authors make no final choice among factor methods or factor patterns. In general, they leave the investigator to choose for himself that pattern which seems best to picture the phenomena of his immediate problem. No criteria are set up for deciding whether nature, psychological, biological, or social, falls into one type of factor pattern or another. There is, however, a strong payment of respect to the mentor, Spearman, and in speaking of preferred types of orthogonal solutions in Chapter V, the simple Spearman pattern with one common factor comes first and the Holzinger bi-factor pattern comes closely behind. Both patterns are regarded by many critics as being very arbitrary and as having little to recommend them except their simplicity. Other "preferred" patterns include the principle-factor and the multiple-factor types. The principle-factor solution yields bi-polar factors (both positive and negative factor loadings), whereas the multiple-factor solution by rotation of axes aims at unipolar factors (only positive factor loadings). It is pointed out that almost any type of solution leads to psychologically meaningful, or otherwise significant factors. It can be admitted that human imagination is sufficiently elastic to read meaning into many really meaningless "factors," yet it is hard to see how bi-polar factors have any reasonable interpretation when dealing with a pattern of abilities. Negative contributions of abilities to performances would seem to demand too much, even of human imagination.

The authors provide the proof and the computational steps by which the factor pattern derived by one solution can be transformed into the pattern which would have been derived by another type of solution. It has been pointed out many times before that the same correlation matrix can be represented by an infinite number of factor patterns. There is nothing in correlational data alone to prevent their parsimonious description in terms of a small set of common variables; in fact they can be equally well accounted for mathematically by any number of such sets. The choice of set which leads to the most fruitful account of the phenomena in question depends upon logical criteria based upon defensible assumptions concerning the nature of those phenomena. The authors seem to feel that any factors which can be named because they are meaningful deserve status as descriptive entities, regardless of which type of solution or which type pattern is assumed.

One weakness of all factor methods—the lack of standard errors or their substitutes—has often been deplored, and rightly so. With the exception of Spearman's tetrad differences no factorial constant has previously been provided with a sampling formula. In this volume the authors derive methods of estimating standard errors of factor loadings (factor coefficients) and of residuals. The limited applicability and the lack of ease of computation of these statistics, however, leave much to be desired.

The authors' solution of the question of how many factors to extract and the knotty problem of unknown communalities rests on the advance determination of the number of factors in the common-factor space. This in turn depends upon the use of Holzinger's B-coefficient, or coefficient of belonging. This coefficient, empirically developed, requires a large amount of subjective judgment to apply, lacking criteria of significant changes in size. Their method for estimating communalities in advance also depends upon the assumed number of common factors. Knowing the number of common variables in advance would, of course, solve the troublesome question of when to cease extraction of factors. Even knowing the communalities in advance, or having good estimates of them, solves the same question for then one would cease extractions when communalities are exhausted. But, unfortunately, the dependability of the B-coefficient is not sufficiently demonstrated. In view of the lack of any other adequate index of the number of common factors, however, the B-coefficient may be included among the things which point to the rank of the correlation matrix.

Those familiar with the British contributions to factor methods will be likely to miss the mention of a number of variations more popular in the Isles. This statement applies particularly to the work of Thomson, Burt, and Stephenson. Those who follow the Thurstone procedures closely will fail to find mention of some of the refinements in computational techniques which have appeared since Thurstone's *Vectors of Mind*.

With these deficiencies having been mentioned, however, one can still say that the present volume is the most comprehensive and satisfying exposition of its subject that has yet appeared. Nowhere else can one find an account so complete and in terms that are bound to gain and hold scientific respect for methodological advances in a statistical field which now extends its usefulness well beyond the boundaries of psychology.

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SOCIAL RESEARCH: A STUDY IN METHODS OF GATHERING DATA. (2nd Ed.) By George A. Lundberg. New York: Longmans, Green, 1942. Pp. xx+426.

The second edition of *Social Research* is more than a mere modernization of the first edition. Goodly portions of the more theoretical portions of the earlier book were removed to become the major feature of *Foundations of Sociology*, a text which appeared in 1939. To the remaining portions of the 1929 edition much practical material has been added. As a result Lundberg is able to present a reference book of importance to all workers in the social-science area.

The first three chapters of *Social Research* cover the ABC's of scientific endeavor. Here are well-written pleas for a more operational and highly quantitative approach to the study of social problems. The author seems unduly disturbed by the thought that in some quarters the data of the social sciences are regarded as inherently different from those of the other sciences. To Lundberg an acceptance of this belief apparently seems to imply that ultimate failure must be the lot of the social scientist. But to the reviewer the problem is of little consequence. Whether the complexities facing the social scientist are qualitatively or only quantitatively different from those to be met by the physical scientist is a philosophical rather than a scientific problem. As long as research possibilities keep appearing, and there is every indication that our research leads are becoming more rather than less numerous, we need not be greatly concerned over the ultimate fate of our science. And is it heresy to hazard a guess that the findings of the physicist will always put our data to shame?

Lundberg presents a well-documented account of the terminology of social science and its principal methods and tools. The tools particularly discussed are the schedule, the questionnaire, the several sorts of opinion scales, sociometric scales and ratings, and the interview. Each chapter contains helpful suggestions for further study.

Although the book contains numerous references to the psychological literature there is a heavy weighting in favor of sociological studies. For example, the only mention of the J-curve is in the form of a few article titles and even these are not given in the chapter on institutional behavior. There are many other serious omissions which may discourage the psychological reader. Nevertheless, the reviewer feels that *Social Research* should make an admirable text for a second course in social psychology, even for one given in a department of psychology. For Lundberg has presented a splendid structural framework, a good coverage of the more quantitative of the sociological articles and at least a fair picture of the psychological literature. And, as far as the reviewer knows, his book has no serious competitor.

PAUL R. FARNSWORTH.

Stanford University.

LANGUAGE HABITS IN HUMAN AFFAIRS. By Irving J. Lee. New York: Harper, 1941. Pp. xxvii+278. \$1.25.

From the title of Dr. Lee's book, *Language Habits in Human Affairs*, we might well have expected first and foremost to have heard about the language men use in communicating with one another, whether at work or at play, whether in joy or in grief, whether in friendship or in enmity, whether in cooperation or in rivalry. We might well have expected Dr. Lee to tell us how men use language in coming to understand one another and in coming, through this, to build, not only common

conceptions of the physical world but also a common world of values. The language of which we might have expected to hear is the language in which such words as "you" and "I," "please" and "let's," "yes" and "no" play a central role and are closely supported by such words as "if" and "perhaps," "today" and "tomorrow," "purpose" and "cause," as well as by such words as "experience," "attempt," "decision," and "agreement." But Dr. Lee has hardly anything to say about this language. He is concerned almost exclusively with a far more restricted language which is composed almost entirely of words which refer to physical objects, to the qualities of physical objects, and to the elements of which physical objects are composed.

That Dr. Lee should concern himself solely with "language" in this very restricted sense makes one wonder whether he ever stopped to ask himself what human affairs are or what part language plays in them. Instead he seems to have taken over, quite uncritically, the grotesquely naïve conceptions that form the basis of Count Alfred Korzybski's *Science and Sanity*—a book he constantly quotes as having supreme authority.

Dr. Lee's book rests on the assumption that our perceptions reveal to us a world of objective "life facts" all of which exist "outside our skins" but of which we have direct and true knowledge *provided* we keep still and don't go talking about them. As soon as we begin to talk, all sorts of dreadful things begin to happen. We begin to forget that our descriptions of "life facts" are incomplete and that they need constant revision to keep them abreast of changes in the "life facts." We forget too that the words we use have a variety of meanings and may easily be misinterpreted. Nor is this all. In generalizing, we fail to recognize the individual character of the things we call "the same"; we fail to notice exceptions to our generalizations; we group things into sharply distinct categories and forget the gradual transitions there may be between the things our categories bid us regard as sharply distinct.

That these are all common errors no one would deny. Yet Mr. Lee's account of them is based on such a naïve conception of "life facts" and of language that its influence can only be to perpetuate them. It is not surprising that the text of Mr. Lee's book is crammed with examples of the very errors and confusions that he so solemnly warns his readers against.

Mr. Lee's confusions arise mainly from his failure to recognize that the world of "life facts" which he regards as the starting-point of all knowledge and discourse is something that has, in fact, resulted from our having lived from infancy amongst others, from our having responded to what we saw others do and especially to what we heard them say: in short, from our education. The works of Helen Keller serve to remind us how meager our perception of "life facts" would have been if we had not had the words of others to help us explore the world. Mr. Lee's confusions are made the greater by his failure to recognize that the common world of "life facts" in which we find ourselves living is as much the product of our being biologically similar and of our having inherited a common culture (that has been in process of development since the first emergence of man) as it is of our living in a common physical environment.

It is true that in an early chapter Mr. Lee quotes approvingly William Blake's "Proverb of Hell" which runs, "A fool sees not the same tree that a wise man sees." It is also true that he points out later on that different historians have different theories of history. But he passes on at once from these awkward facts without recognizing that they are dynamite to his theory. Had he really stopped to ask how, starting from such differences, human beings achieve agreement and objectivity, and what part language plays in their doing so, he would have been raising

questions of central importance. His one attack upon any such question is in his chapter on the use of the word "is" and it is just here, as one might expect, that his lack of understanding of the nature of language leads him into his worst confusions. According to Mr. Lee all descriptive statements of the kind, "The apple is green," as well as all classificatory statements of the kind, "Man is an animal," are by their very nature "false to fact." Statements about what goes on "inside our skins" of the kind, "I am hungry," are doubly false to fact since what goes on "inside our skins" does not have the status of "life fact" in the first place. Only "life facts" existing outside our skins are true, and then only to themselves. This is a philosophy which takes us back with Gulliver to the Balnibarbian Academy of Lagado.

JOHN PILLEY.

Wellesley College.

PSICOLOGÍA EVOLUTIVA DEL NIÑO Y EL ADOLESCENTE. By Emilio Mira y López. Rosario: Librería y Editorial Ruiz, 1941. Pp. 271.

As presented by many authors, developmental psychology tends either to emphasize the minutiae of developmental processes at the expense of psychology, or, if truly psychological, to lose its developmental point of view. In his short but informative book Professor Mira y López has achieved a remarkable balance between the two components, and this balance is consistently maintained. The author seems to refer his feat to his adherence to the procedure of Felix Krueger, in which "understanding" is given the right of way over "explanation." A less pedantic characterization would be the statement that here we have a *précis* of child psychology in terms of the unitary personality. Whatever may be the basis of the accomplishment, this account of individual development is concise, well-structured, and goal-directed. The large number of facts that it contains are synthesized in a manner most helpful to teacher or parent but also suggestive to the interpretative experimentalist. The fact that the author, now Argentinian by adoption, is a distinguished experimental psychologist, enhances his deftness of treatment.

The book contains fourteen chapters on psychological development through childhood, a fifteenth chapter on adolescence, and an appendix consisting of the Ballard test and Ozeretzki's scale of psychomotor development. Each brief chapter carries its own bibliography, and an index is unfortunately lacking.

Mira y López avoids what he considers to be the excesses both of reflexology and of psychoanalysis. In his treatment of conditioning he seeks to show that this useful and acceptable explanatory principle is definitely restricted to lower integrations. Admission of the "birth trauma" is balanced by discussion of developmental principles from Adler and Künkel. Throughout, however, an autonomous portrayal of psychological development, having regard for social factors and familial situations, is presented. The clarity of literary expression will be found refreshing by psychologists who read Spanish. Pan-American psychological literature is to be reckoned with, and this work is a welcome contribution.

HOWARD DAVIS SPOERL.

American International College.

THE TRAUMATIC NEUROSES OF WAR. By Abram Kardiner. New York: Hoeber, 1941. Pp. x+258.

While seeming to discuss only a narrow branch of knowledge, some books succeed in illuminating a wide area. Kardiner's *The Traumatic Neuroses of War* is such

a one. Though the author says he "seeks merely to explore a highly specific syndrome which can be called the *traumatic neurosis*" (3), he actually presents a detailed system, using as examples some of the neuroses arising from war experiences.

The psychoanalytic school postulates certain drives or instincts and builds its explanations of behavior from conflicts between them. No one can actually observe an instinct or a drive. The observer notes certain sequences of action, and then says: "These must have been caused by such and such a drive, or by a conflict between two drives." Kardiner does not deny the existence of drives. He does, however, question their utility as an operational tool, particularly in dealing with the neuroses. In their place he offers the concept of "action syndrome" and its function in the total organism.

"Action syndrome" is the name for a collection of techniques of adaptation. The normal individual develops the feeling: "I can do that." Through a rather complicated series of experiences, he achieves some sort of mastery over his environment. As a result of a severe trauma, the individual seems to lose many of his action syndromes. He "withdraws the adaptive mechanisms" (180) and approaches the conditions of infancy. "The traumatic neurosis is the record of the lasting consequences of an abrupt change in the external environment to which the resources of the individual are unequal." The part of the individual which is impaired is the ego, "which means the personality as a whole from the point of view of direct experience and connotable by the pronoun 'I'" (199). The traumatic neurosis, and possibly other neuroses, are thus not so much the result of conflict between impulses as they are names for the failure to adapt to the outer world.

Central to this "ego psychology" is the concept of inhibition. For some reason the individual after undergoing a trauma is unable to reorganize his action syndromes. He tries to re-establish his contact with the world, but his means of doing so satisfactorily have been impaired; his inhibitions loom too large. This is perhaps the most unsatisfactory portion of Kardiner's study, since so little is known about inhibition. However he does not gloss over the unknown or dismiss it: "The concept inhibition had to be accepted as a datum, for nothing definite is known about the exact mechanism whereby it is instituted, (and) the technique by which it is effected in complicated reactions which are under no voluntary control still remain very obscure" (200).

This approach to the neuroses seems to promise more than orthodox psychoanalysis, with its rather dark and unfathomable forces in the id, carefully kept hidden from a more or less impotent ego by a mysterious censor. Through his criticism of Freud's basic postulates and his substitution of others more subject to observation and experimentation, Kardiner will further the understanding of neuroses, those of peace no less than those of war.

ARNOLD THOMSEN.

Elmo Roper, Market Research.

THE RORSCHACH TECHNIQUE. By B. Klopfer and D.M. Kelley. New York: World Book Company, 1942. Pp. x+405.

The authors have attempted to present a complete manual of instruction for the use of the Rorschach method, and the result is the most thorough and complete summary of Rorschach material available.

The first section of the book serves as a general introduction to the field. A

concise history of the Rorschach test is given in the first chapter, ranging from the early use of inkblots before Rorschach's work up to the latest developments in group testing. A second chapter discusses the methodological problems of objectivity, standardization, and validity. Although statisticians may disagree with many of the arguments advanced against standardization and validating statistics, nevertheless the authors make some sound objections to the routine application of statistical formulae and the development of a mechanical interpretative procedure.

The second part of the book covers the actual techniques of administration, scoring, and tabulation of records. Under the topic of administration the three stages of performance proper, inquiry, and testing the limits are fully described and discussed. A separate chapter is devoted to each of the three types of scores: location (area of blot used), determinant (form, movement, color, or shading), and content. The scoring system presented is that of Klopfer, which is more extensive than the original one used by Rorschach but simpler than that of Beck.

Methods and theories of interpretation are discussed in the third section. The various meanings possible for each scoring symbol are given, with an emphasis on the need for considering each score only in relation to the total record and its varied nuances. According to the authors, the Rorschach gives the basic structure of the personality and behavior can be inferred only indirectly—a neat rationalization for the difficulty of validating projective material, since overt behavior need not agree with personality structure.

Personality is divided into two aspects: intellectual and emotional. The usual indicators of intellectual level are described: wholes, movement responses, form accuracy, originals, and variety of content. The authors emphasize that the Rorschach record gives a picture of how the subject uses his intelligence and therefore discrepancies between Rorschach estimates of intelligence and Binet IQ's should be of particular interest.

A discussion of the emotional aspect of personality includes the topics of control, maturity, anxiety, and *erlebnistypus*. The authors discuss the subject's adjustment to "promptings from within" (fantasy or internal stimuli), and his emotional adjustment to reality. Also presented in this section is an unusually rich *verbatim* record including scoring, tabulation, and interpretation of a normal woman of superior intelligence.

In general the system of interpretation given is based on the use of formal scores, and the content of the responses is neglected. Many of the criticisms which might be made of this section are of the authors' theories of personality structure rather than of the system of interpretation *per se*.

The fourth part of the book summarizes the literature on clinical diagnosis. Rorschach patterns characteristic of particular types of diseases or abnormalities are presented. Included in this section are the main findings on organic cases, psychoses, mental defectives, neuroses, delinquents, and the effects of alcohol and drugs.

One of the best features of the book is a complete bibliography of Rorschach publications. One important fault is an absence of statistical evidence for many of the statements made. Rorschach workers and students of the method will probably find the whole book of value. Psychologists and psychiatrists may find the two parts covering administration and interpretation too thorough and detailed, but the sections on history and clinical diagnosis should be of interest to them.

CLAIRE MYERS.

CREATIVE FACTORS IN SCIENTIFIC RESEARCH. By Austin L. Porterfield. Durham, N. C.: Duke Univ. Press, 1941. Pp. x+282.

The purpose of this book is to study the interaction of the psychological, socio-psychological, and cultural factors involved in the development of science and the scientific method. Though the interaction of many determinants is always assumed, two points are especially emphasized throughout the book. One is the importance of cultural factors in the emergence and growth of science, the other is the indispensable part played by imagination in all scientific achievement.

Two passages, one concerning each of the points emphasized, indicate the quality of the book. In discussing the cultural determination of scientific thought, Dr. Porterfield says:

. . . it becomes evident that the total situations of which the scientist finds himself an integral part do not evolve in a vacuum; that the scientific investigator, just as truly as the juvenile delinquent of whom we write so many life histories "must be viewed as a specimen in a cultural series";¹ that is, as one of a generation born into a culture group, absorbing its folkways, its traditions; being molded by the tradition; and in turn modifying it, if ever so little. . . . This current of tradition, this environment . . . is a total groupal-situation with a past through which it has come and a future into which it is evolving. The individual scientist imaginatively participates in the history of this past, works in the present situation, with all its problems, and anticipates some aspects of the evolving future in his attempts at discovery. He lives not only in the dimension of social space as a possessor of a certain status, which may vitiate his scientific conclusions, and the performer of a given function; as a person with certain likes and dislikes, attitudes and values. He lives in the dimension of social time with the past flowing through him into tomorrow. There is no other channel through which the past can flow. (5-6)

This passage is quoted to show the author at his best—*i.e.*, in his presentation of the broad outlines and general setting of his problem. When faced with the concrete particulars of his task he is less effective, chiefly because he is hampered by naïve notions of psychology which have somehow survived his apparently wide reading in the field. An example of his naïveté is his definition of imagination. He writes:

As here used, imagination means the ability to perceive configurations or wholes of reality in space and time, to observe the relations within each configuration as changing with the total situation, to experience insight into and to be able to anticipate or reconstruct the process by which the changes take place, to segregate out components of the evolving Gestalt as new wholes, and to reintegrate these new wholes in a more inclusive, ever-growing configuration of entities, processes, and relations. (62)

With the aid of this inclusive and elastic definition, the author naturally has no trouble in satisfying himself that imagination is involved in all scientific discovery and invention. He is willing, furthermore, to accept as evidence material consisting largely of anecdote and highly interpreted biography. It is difficult, in fact, to escape the impression that the author is not primarily interested in psychological problems as such; that his basic concern is to work out a conception of scientific thought that assigns to human endeavor a role of dignity and importance; and that his stand for imagination is largely determined by the fact that to him imagination seems compatible with human dignity, whereas conditioning and trial-and-error do not.

It is evident that the author has deeply rooted beliefs and attitudes. Among them are a strong predilection for gestalt psychology, a fear that operational disciplines will prove to be stultifying, and a conviction that an unyielding insistence on statistical methods in research may place harmful restrictions on the growth of

¹ John Dollard. *Criteria for the life history*. New Haven, 1935, p. 13.

a young science. It is doubtful whether those who share the author's views will feel that his book has strengthened the position they hold in common.

EDNA HEIDBREDER.

Wellesley College.

PSYCHOLOGICAL EFFECTS OF WAR ON CITIZEN AND SOLDIER. By R. D. Gillespie.
New York: Norton, 1942. Pp. 251.

The author of *Psychological Effects of War on Citizen and Soldier* is an English psychiatrist, now connected with the RAF. In the opening chapter, "changing concepts in psychoneuroses," he briefly traces the effects of psychiatrist's concepts on patient's complaints. Oftentimes a patient is influenced to respond with certain symptoms merely because the psychiatrist, due to his particular set of constructs, thinks people ought to act in a certain way.

There are two observations of importance for American psychologists at the present time. Bombing does not seem to lead to any great increase in psychological disturbances among civilians. Children in particular seem unaffected, especially if adults are calm. The second important observation is that bombing has led to a new type of life for many people. Community centers and shelter life fulfill a need which is not met in large cities. This need is to be with people and to share experiences with them. A good deal of the dissatisfactions noticed in modern life arise, Gillespie thinks, from the loneliness of urban existence. Aside from the sections dealing with these observations, the book seems rather unrewarding. There is not an overabundance of new material, and there are evidences of hasty preparation. The book was based upon the Salmon Lectures of the New York Academy of Medicine.

ARNOLD THOMSEN.

Elmo Roper, Market Research.

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